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AVIONICS INSTRUMENT SYSTEMS SPECIALIST AFSC 32551.(U)
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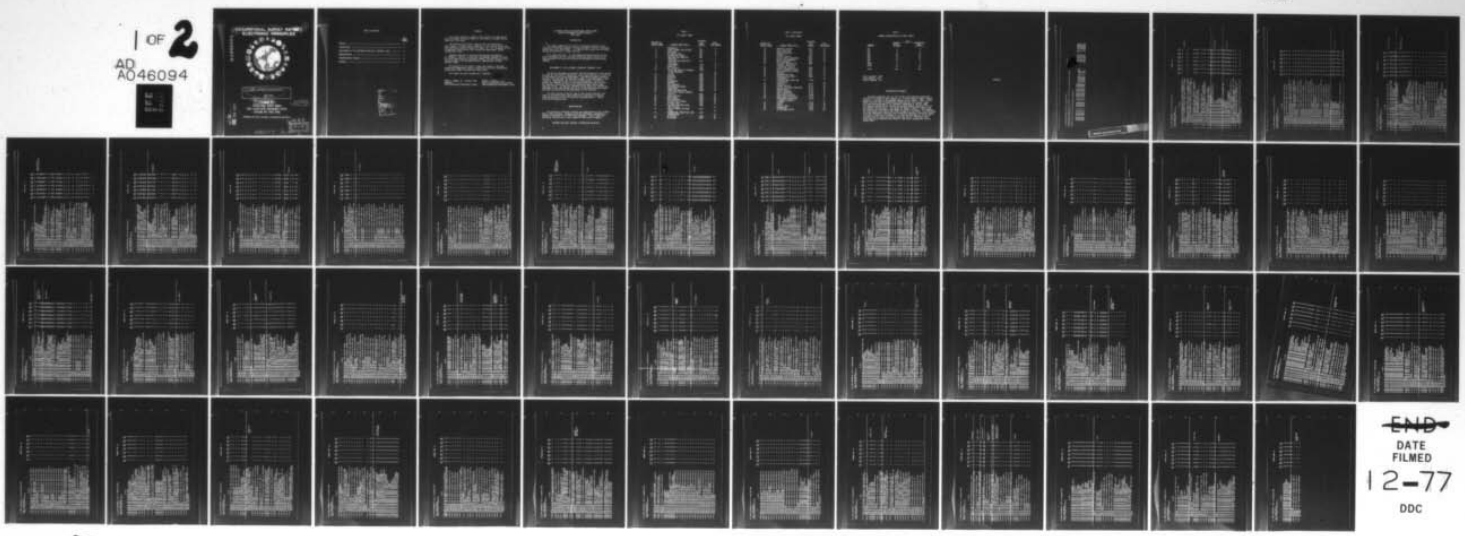

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# OCCUPATIONAL SURVEY REPORT
# ELECTRONIC PRINCIPLES

AVIONICS INSTRUMENT SYSTEMS SPECIALIST

AFSC 32551

AFPT-90-325-222

22 Sep 1977

OCCUPATIONAL SURVEY BRANCH
USAF OCCUPATIONAL MEASUREMENT CENTER
LACKLAND AFB TEXAS 78236

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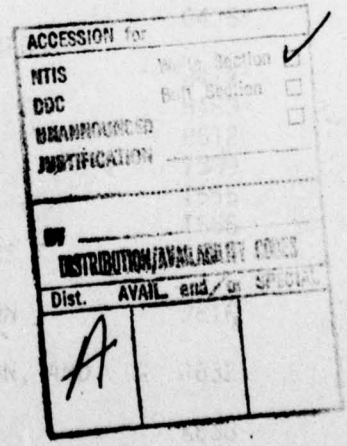

## PREFACE

This report presents a summary of the results of a detailed Air Force Electronic Principles Survey of the Avionics Instrument System Specialist, AFSC 32551.

The Electronic Principles Inventory (EPI) was developed by Major Thomas J. O'Connor and Mr. Hendrick W. Ruck and the survey data were analyzed by Captain Frederick B. Bower, Jr. All are members of the Occupational Survey Branch, USAF Occupational Measurement Center, Lackland AFB, Texas.

Computer programs for analyzing the data were designed by Dr. Raymond E. Christal, Occupational and Manpower Research Division, Air Force Human Resources Laboratory (AFHRL), and were written by the Project Analysis and Programming Branch, Computational Sciences Division, AFHRL.

Distribution of this report is made upon request to the USAF Occupational Measurement Center, attention of the Chief, Occupational Survey Branch (OMY), Lackland AFB, Texas 78236.

This report has been reviewed and is approved.

JAMES A. TURNER, JR., Colonel, USAF
Commander
USAF Occupational Measurement Center

WALTER E. DRISKILL, Ph.D.
Chief, Occupational Survey Branch
USAF Occupational Measurement Center

ELECTRONIC PRINCIPLES OCCUPATIONAL SURVEY REPORT
AVIONICS INSTRUMENT SYSTEMS SPECIALIST
AFSC 32551

## INTRODUCTION

This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Avionics Instrument Systems Specialist (AFSC 32551). The data for this report were collected during the period April through June 1977.

This report describes: (1) development and administration of the survey instrument; and (2) electronic principles used by DAFSC 5-skill level personnel both CONUS and overseas and assigned to selected major commands.

## DEVELOPMENT OF THE ELECTRONIC PRINCIPLES INVENTORY (EPI)

The EPI was developed by personnel from the Occupational Survey Branch who were well qualified in theoretical physics and electronics, as well as in task analysis and survey development. Over 300 maintenance personnel from SAC, TAC, ADC, MAC, and AFCS participated in the development of the inventory. Representing the five ATC training centers, electronics experts who averaged 12 years of maintenance experience and four years of electronic principles instruction experience spent several weeks refining the EPI. In addition, personnel at the Electrical Engineering Department of the USAF Academy and the Air Force Human Resources Laboratory were consulted during the development of the inventory.

The final version of the EPI used in this survey contained 1,257 items in 62 subject matter areas covering all electronic principles training given at the five ATC technical training centers. Table 1 lists the 62 subject areas.

## ADMINISTRATION

The Electronic Principles Inventory was administered by mail to AFSC 32551 airmen worldwide. Responses from 304 individuals represented 22 percent of the total of all AFSC 32551 personnel. Table 2 shows the percentage distribution by major command of the survey incumbents.

TABLE 1

EPI SUBJECT AREAS

| SEQUENCE OF SUBJECT AREAS | SUBJECT AREA TITLE | BEGINNING ITEM NUMBER | GPSUM PAGE NUMBER |
|---|---|---|---|
| 1 | MATHEMATICS | A1 | 2 |
| 2 | DIRECT CURRENT AND VOLTAGE | A15 | 2 |
| 3 | RESISTANCE | A24 | 2 |
| 4 | MULTIMETER USES | B52 | 3 |
| 5 | ALTERNATING CURRENT | B61 | 4 |
| 6 | INDUCTORS AND INDUCTIVE REACTANCE | B67 | 4 |
| 7 | CAPACITORS AND CAPACITIVE REACTANCE | C92 | 5 |
| 8 | TRANSFORMERS | C128 | 6 |
| 9 | MAGNETISM | C171 | 7 |
| 10 | RCL CIRCUITS | D185 | 8 |
| 11 | SERIES AND PARALLEL RESONANCE (TIME CONSTANTS) | D229 | 10 |
| 12 | FILTERS | D239 | 10 |
| 13 | COUPLING | E261 | 11 |
| 14 | SOLDERING | E273 | 11 |
| 15 | RELAYS | E295 | 12 |
| 16 | MICROPHONES | F314 | 12 |
| 17 | SPEAKERS | F327 | 13 |
| 18 | OSCILLOSCOPES | F342 | 13 |
| 19 | SEMICONDUCTOR DIODES | G354 | 13 |
| 20 | TRANSISTORS | G404 | 15 |
| 21 | TRANSISTOR AMPLIFIERS | G428 | 16 |
| 22 | SOLID-STATE SPECIAL PURPOSE DEVICES | H477 | 19 |
| 23 | POWER SUPPLIES | H483 | 19 |
| 24 | OSCILLATORS | H512 | 19 |
| 25 | MULTIVIBRATORS | I539 | 20 |
| 26 | LIMITERS AND CLAMPERS | I555 | 21 |
| 27 | ELECTRON TUBES | I565 | 21 |
| 28 | ELECTRON TUBE AMPLIFIERS AND CIRCUITS | J609 | 22 |
| 29 | SPECIAL PURPOSE ELECTRON TUBES | J616 | 23 |
| 30 | HETERODYNING, MODULATION, AND DEMODULATION | J632 | 23 |
| 31 | AM SYSTEMS | K638 | 23 |
| 32 | FM SYSTEMS | K666 | 24 |

TABLE 1 (CONTINUED)

EPI SUBJECT AREAS

| SEQUENCE OF SUBJECT AREAS | SUBJECT AREA TITLE | BEGINNING ITEM NUMBER | GPSUM PAGE NUMBER |
|---|---|---|---|
| 33 | NUMBERING SYSTEMS | K685 | 25 |
| 34 | LOGIC FUNCTIONS | L695 | 25 |
| 35 | BOOLEAN EQUATIONS | L708 | 26 |
| 36 | COUNTERS | L733 | 27 |
| 37 | TIMING CIRCUITS | M757 | 27 |
| 38 | USE OF SIGNAL GENERATORS | M769 | 28 |
| 39 | MOTORS AND GENERATORS | M779 | 28 |
| 40 | METER MOVEMENTS | N808 | 29 |
| 41 | SATURABLE REACTORS AND MAGNETIC AMPLIFIERS | N818 | 29 |
| 42 | WAVESHAPING CIRCUITS | N834 | 30 |
| 43 | SINGLE SIDEBAND SYSTEMS | O845 | 30 |
| 44 | PULSE MODULATION SYSTEMS | O875 | 31 |
| 45 | ANTENNAS | O914 | 32 |
| 46 | TRANSMISSION LINES | P953 | 34 |
| 47 | WAVEGUIDES AND CAVITY RESONATORS | P984 | 35 |
| 48 | MICROWAVE AMPLIFIERS AND OSCILLATORS | P1034 | 37 |
| 49 | REGISTERS | Q1110 | 39 |
| 50 | STORAGE DEVICES | Q1117 | 40 |
| 51 | DIGITAL TO ANALOG CONVERTERS | Q1126 | 40 |
| 52 | PHANTASTRONS | Q1140 | 41 |
| 53 | SCHMITT TRIGGERS | R1141 | 41 |
| 54 | CABLE FABRICATION | R1144 | 41 |
| 55 | INPUT/OUTPUT DEVICES | S1146 | 41 |
| 56 | PHOTO SENSITIVE DEVICES | S1149 | 41 |
| 57 | SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS) | S1150 | 41 |
| 58 | INFRARED | T1159 | 41 |
| 59 | LASERS | T1186 | 42 |
| 60 | DISPLAY TUBES | T1220 | 43 |
| 61 | PROGRAMMING | U1234 | 43 |
| 62 | DB AND POWER RATIOS | U1255 | 44 |

TABLE 2

COMMAND REPRESENTATION OF SURVEY SAMPLE

| | 32551 | |
|---|---|---|
| COMMAND | PERCENT ASSIGNED | PERCENT OF SAMPLE |
| ADC | 5 | 5 |
| ATC | 6 | 5 |
| LOG | 1 | 0 |
| MAC | 26 | 31 |
| SAC | 23 | 22 |
| AFSC | 2 | 2 |
| TAC | 23 | 21 |
| AAC | 1 | 1 |
| USAFE | 8 | 7 |
| PACAF | 5 | 6 |
| TOTAL | 100 | 100 |

Total Assigned - 1439
Total Sampled - 304
Percent Sampled - 22%

## PRESENTATON OF RESULTS

Personnel responded "yes" or "no" to the 1,257 electronic principles questions as related to their present job. A Group Summary (GPSUM) computer printout is provided in the Appendix portion of this report. Page 1 of the GPSUM lists the seven selected groups identified for this report. Pages 2-44 show the percentage of the incumbents responding to the EPI items. The computer program results display the percent members answering "yes" to the subject area questions. The reader can locate a specific subject area by referring to the Appendix page number as listed in Table 1. For example, the Transformers area results are given on page 6 of the GPSUM. The percentage of survey respondents indicating use of specific electronic principles ranged from high in areas such as Relays (p. 12) and Oscilloscopes (p. 13) to low in areas such as Lasers and Display Tubes (pp. 42-43). Additional AFSC 325X1 data can be obtained upon request to the Chief, Occupational Survey Branch (OMY).

# APPENDIX

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS



TABULATION OF ELECTRONIC PRINCIPLES UTILIZATION DATA FOR SELECTED GROUPS
IN THE 325X1 CAREER FIELD.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

| | | | | | |
|---|---|---|---|---|---|
| GROUP IDENTITY = | SPC101 | ALL AIRMEN DAFSC 32551 | | CONTAINING | 304 MEMBERS. |
| GROUP IDENTITY = | SPC102 | ALL AIRMEN DAFSC 32551 | STATIONED IN CONUS | CONTAINING | 228 MEMBERS. |
| GROUP IDENTITY = | SPC103 | ALL AIRMEN DAFSC 32551 | STATIONED OVERSEAS | CONTAINING | 76 MEMBERS. |
| GROUP IDENTITY = | SPC104 | ALL AIRMEN DAFSC 32551 | ASSIGNED TO MAC | CONTAINING | 94 MEMBERS. |
| GROUP IDENTITY = | SPC105 | ALL AIRMEN DAFSC 32551 | ASSIGNED TO SAC | CONTAINING | 67 MEMBERS. |
| GROUP IDENTITY = | SPC106 | ALL AIRMEN DAFSC 32551 | ASSIGNED TO TAC | CONTAINING | 65 MEMBERS. |
| GROUP IDENTITY = | SPC107 | ALL AIRMEN DAFSC 32551 | ASSIGNED TO USAFE | CONTAINING | 22 MEMBERS. |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | DY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|---|
| A | 1 | A1-01 IN YOUR PRESENT JOB, DO YOU USE INSTRUMENTS, SUCH AS METERS OR OSCILLOSCOPES, IN WHICH IT IS NECESSARY TO AMPLIFY OR ATTENUATE VOLTAGE, RESISTANCE, ETC., BY POWERS OF 10. | 73 | 78 | 61 | 66 | 82 | 83 | 64 | MATHEMATICS |
| A | 2 | A1-02 DO YOU USE PUBLICATIONS, SUCH AS A TECHNICAL ORDERS OR MAINTENANCE MANUALS, IN WHICH IT IS NECESSARY FOR YOU TO MULTIPLY OR DIVIDE BY A POWER OF 10 BEFORE YOU CAN APPLY THE INFORMATION FROM THE PUBLICATION IN A USEFUL WAY ON THE JOB. | 43 | 43 | 42 | 34 | 52 | 45 | 41 | |
| A | 3 | A1-03 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS. | 33 | 31 | 37 | 22 | 37 | 34 | 64 | |
| A | 4 | A1-04 DO YOU CALCULATE THE SQUARE ROOT OF A QUANTITY. | 7 | 6 | 12 | 5 | 4 | 6 | 14 | |
| A | 5 | A1-05 DO YOU SOLVE FOR UNKNOWN QUANTITIES. | 31 | 30 | 36 | 28 | 33 | 22 | 50 | |
| A | 6 | A1-06 DO YOU CONVERT NUMBERS TO LOGARITHMS. | 4 | 2 | 8 | 3 | 0 | 5 | 9 | |
| A | 7 | A1-07 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS. | 4 | 3 | 7 | 3 | 1 | 5 | 5 | |
| A | 8 | A1-08 DO YOU SOLVE QUADRATIC EQUATIONS. | 6 | 4 | 13 | 7 | 3 | 5 | 5 | |
| A | 9 | A1-09 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS. | 3 | 2 | 8 | 3 | 1 | 2 | 5 | |
| A | 10 | A1-10 DO YOU PERFORM CALCULATIONS ON VECTOR QUANTITIES. | 7 | 6 | 11 | 4 | 7 | 9 | 14 | |
| A | 11 | A1-11 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT. | 9 | 10 | 8 | 3 | 7 | 15 | 18 | |
| A | 12 | A1-12 DO YOU DETERMINE AREAS OF PLANE FIGURES. | 5 | 4 | 9 | 3 | 0 | 5 | 18 | |
| A | 13 | A1-13 DO YOU SOLVE OR USE SIMULTANEOUS EQUATIONS. | 9 | 7 | 12 | 9 | 4 | 8 | 18 | |
| A | 14 | A1-14 DO YOU SOLVE OR USE PROPORTIONS. | 18 | 15 | 26 | 14 | 19 | 19 | 23 | |
| A | 15 | A2-01 DO YOU USE THE TERM VOLTAGE OR VOLT (V). | 96 | 96 | 95 | 95 | 99 | 95 | 100 | DIRECT CURRENT AND VOLTAGE |
| A | 16 | A2-02 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF). | 32 | 31 | 34 | 35 | 25 | 32 | 45 | |
| A | 17 | A2-03 DO YOU USE THE TERM OHM. | 96 | 97 | 92 | 96 | 99 | 95 | 100 | |
| A | 18 | A2-04 DO YOU USE THE TERM ION. | 8 | 8 | 8 | 10 | 4 | 9 | 0 | |
| A | 19 | A2-05 DO YOU USE THE TERM DYNE. | 5 | 4 | 7 | 3 | 3 | 5 | 9 | |
| A | 20 | A2-06 DO YOU USE THE TERM AMPERE. | 89 | 89 | 87 | 84 | 94 | 88 | 95 | |
| A | 21 | A2-07 DO YOU USE THE TERM NEUTRON. | 9 | 7 | 16 | 13 | 3 | 6 | 14 | |
| A | 22 | A2-08 DO YOU USE THE TERM COULOMB. | 8 | 7 | 9 | 7 | 4 | 6 | 14 | |
| A | 23 | A2-09 DO YOU USE THE TERM PROTON. | 9 | 7 | 16 | 13 | 3 | 6 | 18 | |
| A | 24 | A3-01 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB. | 69 | 72 | 61 | 63 | 76 | 79 | 68 | RESISTANCE |
| A | 25 | A3-02 DO YOU INSPECT RESISTORS. | 68 | 71 | 61 | 62 | 75 | 66 | 86 | |
| A | 26 | A3-03 DO YOU CLEAN RESISTORS. | 44 | 45 | 42 | 37 | 43 | 42 | 64 | |
| A | 27 | A3-04 DO YOU ADJUST RESISTORS. | 63 | 63 | 66 | 61 | 64 | 63 | 91 | |
| A | 28 | A3-05 DO YOU CHECK OHMIC VALUE OR RESISTORS. | 72 | 71 | 74 | 60 | 75 | 77 | 95 | |
| A | 29 | A3-06 DO YOU REMOVE OR REPLACE RESISTORS. | 60 | 61 | 57 | 40 | 64 | 68 | 86 | |
| A | 30 | A3-07 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS YOU PERFORM. | 26 | 26 | 24 | 23 | 18 | 32 | 32 | |
| A | 31 | A3-08 DO YOU USE OR REFER TO RESISTOR SYMBOLS SUCH AS FIXED RESISTOR SYMBOLS OR TAPPED RESISTOR SYMBOLS. | 64 | 62 | 68 | 62 | 60 | 68 | 82 | |
| A | 32 | A3-09 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FIXED WIRE, SLIDE TAP, RHEOSTAT, OR POTENTIOMETER. | 63 | 63 | 62 | 54 | 66 | 68 | 77 | |
| A | 33 | A3-10 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE OHMIC VALUE OF RESISTANCE. | 52 | 52 | 50 | 36 | 58 | 48 | 73 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|---|
| A | 34 | A3-11 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE TOLERANCE. | 93 | 99 | 91 | 30 | 93 | 95 | 85 | |
| A | 35 | A3-12 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE FAILURE RATE. | 15 | 14 | 17 | 14 | 7 | 15 | 14 | |
| A | 36 | A3-13 DO YOU MAKE DECISIONS IN WHICH YOU MUST DETERMINE HOW TWO OR MORE BATTERIES MUST BE CONNECTED TOGETHER TO ACHIEVE A SPECIFIC VOLTAGE. | 23 | 22 | 26 | 17 | 25 | 23 | 32 | |
| A | 37 | A3-14 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT BATTERIES, FUSES, CONDUCTORS, LAMPS, OR SWITCHES | 77 | 79 | 74 | 73 | 79 | 80 | 91 | |
| A | 38 | A3-15 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS. | 36 | 35 | 39 | 30 | 37 | 32 | 95 | |
| A | 39 | A3-16 DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS. | 29 | 28 | 33 | 23 | 31 | 26 | 32 | |
| A | 40 | A3-17 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS. | 32 | 29 | 39 | 28 | 31 | 29 | 32 | |
| A | 41 | A3-18 DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS. | 29 | 21 | 30 | 16 | 21 | 23 | 32 | |
| A | 42 | A3-19 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS. | 32 | 30 | 38 | 28 | 30 | 32 | 91 | |
| A | 43 | A3-20 DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS. | 28 | 27 | 30 | 26 | 25 | 28 | 32 | |
| A | 44 | A3-21 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS. | 28 | 26 | 32 | 23 | 24 | 29 | 36 | |
| A | 45 | A3-22 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS. | 26 | 24 | 30 | 21 | 24 | 28 | 27 | |
| A | 46 | A3-23 DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS. | 21 | 19 | 26 | 15 | 16 | 23 | 32 | |
| A | 47 | A3-24 DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS. | 33 | 33 | 34 | 28 | 34 | 32 | 95 | |
| A | 48 | A3-25 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS. | 27 | 28 | 25 | 23 | 27 | 29 | 32 | |
| A | 49 | A3-26 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS. | 28 | 27 | 30 | 22 | 25 | 29 | 27 | |
| A | 50 | A3-27 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS. | 26 | 26 | 25 | 24 | 24 | 28 | 27 | |
| A | 51 | A3-28 DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS. | 21 | 21 | 24 | 15 | 18 | 25 | 27 | |
| B | 52 | B1-01 DO YOU MEASURE RESISTANCE. | 97 | 97 | 97 | 96 | 99 | 97 | 100 | |
| B | 53 | B1-02 DO YOU REPAIR OHMMETERS. | 10 | 9 | 13 | 9 | 10 | 11 | 14 | |
| B | 54 | B1-03 DO YOU MEASURE VOLTAGE. | 98 | 98 | 97 | 98 | 99 | 97 | 100 | |
| B | 55 | B1-04 DO YOU REPAIR VOLTMETERS. | 7 | 6 | 9 | 6 | 7 | 5 | 14 | MULTIMETER USES |
| B | 56 | B1-05 DO YOU REPAIR AMMETERS. | 6 | 5 | 9 | 6 | 3 | 6 | 9 | |
| B | 57 | B1-06 DO YOU MEASURE CURRENT. | 74 | 76 | 68 | 78 | 75 | 72 | 64 | |
| B | 58 | B1-07 DO YOU USE MULTIMETERS. | 98 | 98 | 96 | 98 | 99 | 97 | 100 | |
| B | 59 | B1-08 DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB. | 6 | 5 | 7 | 4 | 4 | 6 | 9 | |
| B | 60 | B1-09 DO YOU READ SCHEMATICS. | 98 | 98 | 99 | 98 | 99 | 95 | 100 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | DY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|---|
| B | 61 | B2-01 DO YOU USE OR REFER TO THE TERM EFFECTIVE VOLTAGE (RMS). | 35 | 35 | 36 | 30 | 36 | 42 | 50 | ALTERNATING CURRENT |
| B | 62 | B2-02 DO YOU USE OR REFER TO THE TERM PEAK TO PEAK VOLTAGE. | 49 | 46 | 38 | 33 | 48 | 52 | 59 | |
| B | 63 | B2-03 DO YOU USE OR REFER TO THE TERM AVERAGE VOLTAGE (DC). | 45 | 46 | 43 | 39 | 39 | 52 | 59 | |
| B | 64 | B2-04 DO YOU USE OR REFER TO THE TERM WAVE LENGTH. | 29 | 29 | 29 | 21 | 39 | 35 | 32 | |
| B | 65 | B2-05 DO YOU USE OR REFER TO THE TERM FREQUENCY. | 66 | 68 | 61 | 57 | 69 | 68 | 84 | |
| B | 66 | B2-06 DO YOU USE OR REFER TO THE TERM INSTANTANEOUS VALUE. | 14 | 16 | 11 | 9 | 13 | 22 | 14 | |
| B | 67 | B3-01 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB. | 21 | 22 | 18 | 21 | 19 | 24 | 27 | |
| B | 68 | B3-02 DO YOU INSPECT INDUCTORS. | 17 | 18 | 12 | 16 | 18 | 20 | 18 | INDUCTORS AND INDUCTIVE REACTANCE |
| B | 69 | B3-03 DO YOU CLEAN INDUCTORS. | 9 | 10 | 5 | 10 | 10 | 6 | 5 | |
| B | 70 | B3-04 DO YOU ADJUST INDUCTORS. | 8 | 8 | 9 | 9 | 4 | 11 | 14 | |
| B | 71 | B3-05 DO YOU REMOVE OR REPLACE INDUCTORS. | 13 | 15 | 9 | 11 | 12 | 20 | 14 | |
| B | 72 | B3-06 DO YOU USE OR REFER TO INDUCTANCE. | 14 | 14 | 16 | 19 | 13 | 14 | 9 | |
| B | 73 | B3-07 DO YOU USE OR REFER TO HENRIES. | 7 | 7 | 8 | 11 | 7 | 5 | 5 | |
| B | 74 | B3-08 DO YOU USE OR REFER TO INDUCTIVE REACTANCE. | 10 | 10 | 12 | 14 | 7 | 9 | 9 | |
| B | 75 | B3-09 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS. | 3 | 3 | 4 | 3 | 0 | 5 | 0 | |
| B | 76 | B3-10 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS. | 4 | 4 | 4 | 3 | 0 | 8 | 0 | |
| B | 77 | B3-11 DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS | 4 | 4 | 4 | 4 | 0 | 6 | 0 | |
| B | 78 | B3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE NUMBER OF TURNS OF THE COIL. | 4 | 4 | 3 | 4 | 0 | 6 | 0 | |
| B | 79 | B3-13. DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE CROSS SECTIONAL AREA OF THE CORE. | 5 | 5 | 4 | 3 | 0 | 8 | 5 | |
| B | 80 | B3-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO ITS LENGTH. | 4 | 4 | 4 | 3 | 0 | 6 | 5 | |
| B | 81 | B3-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE PERMEABILITY OF THE CORE MATERIAL. | 4 | 5 | 3 | 5 | 0 | 8 | 0 | |
| B | 82 | B3-16 DO YOU CALCULATE INDUCTANCE FOR PARTICULAR INDUCTORS USING FORMULAS. | 4 | 4 | 5 | 2 | 3 | 5 | 5 | |
| B | 83 | B3-17 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTANCE IN SERIES. | 5 | 4 | 8 | 5 | 3 | 3 | 5 | |
| B | 84 | B3-18 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL. | 4 | 4 | 5 | 4 | 3 | 3 | 5 | |
| B | 85 | B3-19 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES-PARALLEL CIRCUITS. | 5 | 4 | 5 | 4 | 3 | 5 | 5 | |
| B | 86 | B3-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS. | 8 | 8 | 8 | 10 | 6 | 11 | 5 | |
| B | 87 | B3-21 DO YOU CALCULATE INDUCTIVE REACTANCE. | 6 | 6 | 7 | 7 | 4 | 5 | 5 | |
| B | 88 | B3-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO FREQUENCY. | 5 | 5 | 5 | 6 | 4 | 3 | 0 | |
| B | 89 | B3-23 DO YOU WORK WITH POWER INDUCTORS. | 11 | 11 | 11 | 13 | 7 | 15 | 14 | |
| B | 90 | B3-24 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS. | 3 | 4 | 3 | 3 | 3 | 2 | 5 | |
| B | 91 | B3-25 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS. | 3 | 3 | 3 | 1 | 6 | 2 | 5 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|---|
| C | 92 | C1-01 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS IN YOUR PRESENT JOB. | 69 | 70 | 67 | 69 | 64 | 75 | 77 | |
| C | 93 | C1-02 DO YOU INSPECT CAPACITORS. | 63 | 66 | 53 | 63 | 57 | 69 | 68 | CAPACITORS AND CAPACITIVE REACTANCE |
| C | 94 | C1-03 DO YOU CLEAN CAPACITORS. | 31 | 33 | 25 | 34 | 25 | 29 | 27 | |
| C | 95 | C1-04 DO YOU ADJUST CAPACITORS. | 28 | 31 | 18 | 22 | 25 | 38 | 23 | |
| C | 96 | C1-05 DO YOU TEST CAPACITORS. | 61 | 63 | 55 | 57 | 58 | 71 | 59 | |
| C | 97 | C1-06 DO YOU DISCHARGE CAPACITORS. | 29 | 31 | 22 | 26 | 28 | 31 | 27 | |
| C | 98 | C1-07 DO YOU REMOVE OR REPLACE CAPACITORS. | 50 | 52 | 42 | 51 | 28 | 65 | 64 | |
| C | 99 | C1-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE. | 18 | 19 | 13 | 19 | 9 | 26 | 18 | |
| C | 100 | C1-09 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC. | 7 | 7 | 5 | 5 | 7 | 8 | 5 | |
| C | 101 | C1-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS. | 65 | 66 | 63 | 68 | 61 | 71 | 73 | |
| C | 102 | C1-11 DO YOU USE OR REFER TO CAPACITANCE. | 73 | 74 | 71 | 73 | 67 | 78 | 82 | |
| C | 103 | C1-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT | 59 | 59 | 51 | 57 | 40 | 63 | 68 | |
| C | 104 | C1-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS | 27 | 29 | 21 | 26 | 24 | 31 | 23 | |
| C | 105 | C1-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE | 27 | 25 | 32 | 28 | 14 | 39 | 23 | |
| C | 106 | C1-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES | 12 | 12 | 11 | 7 | 9 | 19 | 23 | |
| C | 107 | C1-16 DO YOU WORK WITH CAPACITORS IN DC CIRCUITS | 48 | 50 | 43 | 49 | 40 | 48 | 64 | |
| C | 108 | C1-17 DO YOU WORK WITH CAPACITORS IN AC CIRCUITS | 67 | 70 | 59 | 67 | 60 | 79 | 73 | |
| C | 109 | C1-18 DO YOU WORK WITH CAPACITORS IN CIRCUITS WITH BOTH DC AND AC | 42 | 45 | 34 | 43 | 37 | 46 | 41 | |
| C | 110 | C1-19 DO YOU WORK WITH CAPACITORS IN DON'T REMEMBER WHICH CIRCUITS | 23 | 21 | 30 | 30 | 18 | 22 | 23 | |
| C | 111 | C1-20 DO YOU CALCULATE CAPACITANCE FOR PARTICULAR CAPACITORS USING FORMULAS | 18 | 18 | 16 | 12 | 9 | 29 | 18 | |
| C | 112 | C1-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL TO THE DIELECTRIC CONSTANT | 37 | 38 | 34 | 41 | 21 | 45 | 50 | |
| C | 113 | C1-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL TO THE DIELECTRIC THICKNESS | 22 | 22 | 21 | 28 | 7 | 29 | 27 | |
| C | 114 | C1-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES | 35 | 36 | 26 | 36 | 19 | 42 | 36 | |
| C | 115 | C1-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL | 38 | 38 | 39 | 35 | 16 | 51 | 59 | |
| C | 116 | C1-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS | 31 | 31 | 30 | 30 | 10 | 43 | 41 | |
| C | 117 | C1-26 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY APPEARS TO DO SO | 29 | 27 | 34 | 30 | 21 | 32 | 23 | |
| C | 118 | C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS | 17 | 15 | 21 | 15 | 12 | 22 | 14 | |
| C | 119 | C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO FREQUENCY | 13 | 11 | 17 | 15 | 6 | 12 | 9 | |
| C | 120 | C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE | 11 | 11 | 8 | 14 | 9 | 11 | 5 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| C 121 | C1-30 DO YOU WORK WITH ROTOR-STATOR (VARIABLE) CAPACITORS | 22 | 23 | 21 | 23 | 19 | 23 | 27 | |
| C 122 | C1-31 DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS | 10 | 11 | 7 | 10 | 7 | 11 | 0 | |
| C 123 | C1-32 DO YOU WORK WITH ELECTROLYTIC (FIXED) CAPACITORS | 43 | 45 | 37 | 44 | 27 | 55 | 59 | |
| C 124 | C1-33 DO YOU WORK WITH PAPER (FIXED) CAPACITORS | 31 | 33 | 24 | 22 | 22 | 38 | 41 | |
| C 125 | C1-34 DO YOU WORK WITH MICA (FIXED) CAPACITORS | 33 | 33 | 30 | 24 | 24 | 40 | 45 | |
| C 126 | C1-35 DO YOU WORK WITH CERAMIC (FIXED) CAPACITORS | 30 | 32 | 24 | 23 | 22 | 38 | 36 | |
| C 127 | C1-36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS | 20 | 29 | 25 | 31 | 33 | 22 | 23 | |
| C 128 | C2-01 DO YOU WORK WITH TRANSFORMERS IN YOUR PRESENT JOB | 44 | 46 | 38 | 31 | 51 | 42 | 68 | |
| C 129 | C2-02 DO YOU INSPECT TRANSFORMERS | 43 | 45 | 39 | 30 | 51 | 40 | 73 | |
| C 130 | C2-03 DO YOU CLEAN TRANSFORMERS | 22 | 24 | 17 | 16 | 26 | 18 | 27 | |
| C 131 | C2-04 DO YOU ADJUST TRANSFORMERS | 12 | 13 | 9 | 10 | 9 | 18 | 14 | |
| C 132 | C2-05 DO YOU TROUBLESHOOT TRANSFORMERS | 38 | 39 | 34 | 23 | 49 | 38 | 50 | TRANSFORMERS |
| C 133 | C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS | 37 | 39 | 30 | 21 | 42 | 38 | 59 | |
| C 134 | C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING | 2 | 3 | 1 | 1 | 1 | 2 | 5 | |
| C 135 | C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (M) | 2 | 2 | 3 | 1 | 0 | 2 | 0 | |
| C 136 | C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M | 3 | 3 | 3 | 1 | 3 | 2 | 5 | |
| C 137 | C2-10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS | 3 | 2 | 7 | 1 | 0 | 2 | 9 | |
| C 138 | C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS | 6 | 5 | 7 | 2 | 6 | 6 | 18 | |
| C 139 | C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS | 4 | 4 | 3 | 3 | 3 | 3 | 0 | |
| C 140 | C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS | 2 | 2 | 3 | 0 | 1 | 2 | 0 | |
| C 141 | C2-14 DO YOU WORK WITH AUTOTRANSFORMERS | 17 | 16 | 20 | 12 | 12 | 22 | 32 | |
| C 142 | C2-15 DO YOU WORK WITH POWER TRANSFORMERS | 38 | 39 | 34 | 24 | 45 | 35 | 68 | |
| C 143 | C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS | 8 | 6 | 13 | 2 | 3 | 12 | 14 | |
| C 144 | C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS | 5 | 4 | 9 | 2 | 6 | 6 | 9 | |
| C 145 | C2-18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMERS | 17 | 19 | 12 | 15 | 21 | 15 | 5 | |
| C 146 | C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE | 35 | 35 | 33 | 22 | 42 | 37 | 50 | |
| C 147 | C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE | 32 | 32 | 33 | 21 | 37 | 32 | 50 | |
| C 148 | C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES | 32 | 33 | 29 | 15 | 43 | 32 | 55 | |
| C 149 | C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO | 11 | 12 | 8 | 6 | 15 | 11 | 14 | |
| C 150 | C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO | 15 | 17 | 9 | 5 | 21 | 17 | 18 | |
| C 151 | C2-24 DO YOU REFER TO BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS | 40 | 41 | 38 | 28 | 48 | 38 | 68 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| C 152 | C2-25 DO YOU REFER TO MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS | 28 | 28 | 29 | 20 | 28 | 28 | 65 | |
| C 153 | C2-26 DO YOU REFER TO MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS | 30 | 29 | 30 | 19 | 30 | 39 | 60 | |
| C 154 | C2-27 DO YOU REFER TO CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS | 32 | 32 | 30 | 21 | 30 | 37 | 65 | |
| C 155 | C2-28 DO YOU REFER TO AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS | 18 | 18 | 16 | 10 | 16 | 25 | 27 | |
| C 156 | C2-29 DO YOU REFER TO IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS | 23 | 23 | 24 | 14 | 24 | 25 | 45 | |
| C 157 | C2-30 DO YOU REFER TO COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS | 29 | 29 | 28 | 18 | 33 | 31 | 45 | |
| C 158 | C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING SCHEMATIC SYMBOLS | 13 | 12 | 13 | 7 | 9 | 17 | 18 | |
| C 159 | C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH | 8 | 8 | 9 | 2 | 9 | 9 | 14 | |
| C 160 | C2-33 DO YOU REFER TO OR USE THE GENERAL RULE THAT THE TURNS RATIO OF A TRANSFORMER IS EQUAL TO THE VOLTAGE RATIO | 9 | 9 | 11 | 3 | 9 | 15 | 9 | |
| C 161 | C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS | 13 | 14 | 12 | 4 | 16 | 14 | 18 | |
| C 162 | C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS | 5 | 5 | 3 | 0 | 7 | 8 | 0 | |
| C 163 | C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS | 4 | 5 | 3 | 0 | 4 | 6 | 5 | |
| C 164 | C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH THREE PHASE TRANSFORMERS | 22 | 24 | 18 | 19 | 18 | 31 | 32 | |
| C 165 | C2-38 DO YOU INSPECT THREE PHASE TRANSFORMERS | 19 | 21 | 13 | 14 | 21 | 22 | 32 | |
| C 166 | C2-39 DO YOU CLEAN OR LUBRICATE THREE PHASE TRANSFORMERS | 8 | 8 | 5 | 2 | 10 | 8 | 5 | |
| C 167 | C2-40 DO YOU ADJUST THREE PHASE TRANSFORMERS | 4 | 4 | 3 | 2 | 0 | 8 | 0 | |
| C 168 | C2-41 DO YOU TROUBLESHOOT THREE PHASE TRANSFORMERS | 17 | 18 | 14 | 14 | 15 | 20 | 23 | |
| C 169 | C2-42 DO YOU REMOVE OR REPLACE COMPLETE THREE PHASE TRANSFORMERS | 20 | 21 | 17 | 17 | 21 | 23 | 27 | |
| C 170 | C2-43 DO YOU REMOVE OR REPLACE THREE PHASE TRANSFORMER PARTS SUCH AS WINDINGS | 2 | 2 | 3 | 1 | 0 | 5 | 0 | |
| C 171 | C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS | 53 | 54 | 47 | 40 | 49 | 60 | 64 | |
| C 172 | C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS | 29 | 33 | 18 | 27 | 24 | 38 | 36 | |
| C 173 | C3-03 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS | 20 | 20 | 21 | 13 | 12 | 34 | 32 | MAGNETISM |
| C 174 | C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS | 19 | 18 | 22 | 15 | 9 | 31 | 23 | |
| C 175 | C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS | 19 | 18 | 22 | 14 | 10 | 29 | 27 | |
| C 176 | C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM | 28 | 29 | 24 | 20 | 18 | 34 | 55 | |
| C 177 | C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX | 49 | 49 | 49 | 31 | 30 | 71 | 82 | |
| C 178 | C3-08 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM | 7 | 7 | 8 | 7 | 1 | 12 | 9 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|---|
| C | 179 | C3-09 DO YOU USE OR REFER TO DOMAIN THEORY OF MAGNETISM | 7 | 6 | 9 | 7 | 0 | 11 | 9 | |
| C | 180 | C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION | 31 | 30 | 32 | 27 | 14 | 40 | 36 | |
| C | 181 | C3-11 DO YOU USE OR REFER TO FLUX DENSITY | 23 | 21 | 30 | 12 | 9 | 30 | 56 | |
| C | 182 | C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT | 50 | 48 | 57 | 43 | 40 | 60 | 64 | |
| C | 183 | C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES | 12 | 11 | 13 | 9 | 6 | 15 | 18 | |
| C | 184 | C3-14 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE NORTH POLE OF A CURRENT CARRYING COIL | 11 | 11 | 11 | 9 | 6 | 14 | 9 | |
| D | 185 | D1-01 DO YOU WORK WITH RC, LR, RCL CIRCUITS IN YOUR PRESENT JOB | 10 | 10 | 8 | 5 | 10 | 15 | 5 | |
| D | 186 | D1-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS | 2 | 2 | 3 | 0 | 1 | 5 | 0 | RCL CIRCUITS |
| D | 187 | D1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS | 2 | 2 | 1 | 0 | 1 | 3 | 0 | |
| D | 188 | D1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS | 2 | 3 | 1 | 0 | 1 | 3 | 5 | |
| D | 189 | D1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS | 2 | 2 | 1 | 0 | 1 | 3 | 5 | |
| D | 190 | D1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS | 2 | 2 | 1 | 0 | 1 | 3 | 5 | |
| D | 191 | D1-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS | 4 | 4 | 3 | 2 | 4 | 3 | 9 | |
| D | 192 | D1-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS | 5 | 5 | 3 | 2 | 6 | 6 | 5 | |
| D | 193 | D1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN WORKING WITH RCL CIRCUITS | 4 | 4 | 3 | 2 | 3 | 6 | 5 | |
| D | 194 | D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS | 4 | 4 | 1 | 1 | 6 | 6 | 0 | |
| D | 195 | D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS | 3 | 4 | 1 | 2 | 3 | 5 | 0 | |
| D | 196 | D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS | 2 | 3 | 1 | 1 | 3 | 3 | 0 | |
| D | 197 | D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS | 4 | 4 | 3 | 2 | 3 | 5 | 5 | |
| D | 198 | D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS | 2 | 2 | 1 | 0 | 0 | 6 | 0 | |
| D | 199 | D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS | 2 | 3 | 1 | 0 | 1 | 6 | 0 | |
| D | 200 | D1-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS | 3 | 3 | 1 | 1 | 1 | 5 | 0 | |
| D | 201 | D1-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS | 2 | 2 | 1 | 0 | 3 | 3 | 0 | |
| D | 202 | D1-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING WITH RCL CIRCUITS | 2 | 3 | 1 | 0 | 1 | 6 | 0 | |
| D | 203 | D1-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS | 2 | 2 | 1 | 0 | 3 | 3 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 |
|---|---|---|---|---|---|---|---|---|
| D 204 | D1-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS | 6 | 6 | 7 | 3 | 6 | 11 | 8 |
| D 205 | D1-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS | 1 | 1 | 3 | 0 | 0 | 2 | 0 |
| D 206 | D1-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS | 1 | 1 | 1 | 0 | 0 | 2 | 0 |
| D 207 | D1-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS | 4 | 4 | 4 | 2 | 4 | 3 | 9 |
| D 208 | D1-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS | 2 | 1 | 4 | 0 | 0 | 2 | 5 |
| D 209 | D1-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS | 2 | 2 | 3 | 0 | 3 | 2 | 5 |
| D 210 | D1-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS | 1 | 1 | 3 | 0 | 0 | 2 | 5 |
| D 211 | D1-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS | 2 | 1 | 3 | 0 | 1 | 2 | 5 |
| D 212 | D1-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS | 2 | 2 | 3 | 1 | 3 | 2 | 5 |
| D 213 | D1-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS | 2 | 2 | 3 | 1 | 1 | 2 | 5 |
| D 214 | D1-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS | 3 | 3 | 3 | 1 | 4 | 2 | 5 |
| D 215 | D1-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS | 2 | 1 | 4 | 0 | 0 | 2 | 5 |
| D 216 | D1-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD | 2 | 2 | 3 | 1 | 1 | 2 | 5 |
| D 217 | D1-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW | 3 | 3 | 3 | 1 | 4 | 2 | 5 |
| D 218 | D1-34 DO YOU CHECK CAPACITORS USING OHMMETERS | 9 | 9 | 9 | 5 | 10 | 11 | 5 |
| D 219 | D1-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION | 7 | 6 | 9 | 4 | 4 | 9 | 5 |
| D 220 | D1-36 DO YOU CHECK INDUCTORS USING OHMMETERS | 7 | 7 | 7 | 4 | 6 | 11 | 5 |
| D 221 | D1-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION | 5 | 5 | 4 | 2 | 3 | 8 | 5 |
| D 222 | D1-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT THETA= 0, PF = 1, AND PA = PT FOR RESONANT CIRCUITS | 1 | 1 | 3 | 0 | 0 | 2 | 0 |
| D 223 | D1-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS | 1 | 1 | 1 | 0 | 0 | 2 | 0 |
| D 224 | D1-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT FREQUENCY FOR SERIES RCL CIRCUITS | 1 | 1 | 3 | 0 | 0 | 2 | 0 |
| D 225 | D1-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT FREQUENCY FOR PARALLEL RCL CIRCUITS | 1 | 1 | 3 | 0 | 0 | 2 | 0 |
| D 226 | D1-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK CURRENT VALUE | 2 | 1 | 5 | 0 | 0 | 3 | 0 |
| D 227 | D1-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q | 1 | 1 | 3 | 0 | 0 | 2 | 0 |
| D 228 | D1-44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT OR PHASE ANGLES FOR RCL CIRCUITS | 2 | 1 | 5 | 0 | 0 | 2 | 5 |

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS GPSUM6 PAGE 10

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| D 229 | D2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH, USE, OR REFER TO SERIES OR PARALLEL RESONANT CIRCUITS OR TIME CONSTANTS | 3 | 3 | 4 | 1 | 3 | 3 | 0 | SERIES AND PARALLEL RESONANCE (TIME CONSTANTS) |
| D 230 | D2-02 DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS | 2 | 2 | 3 | 0 | 1 | 3 | 0 | |
| D 231 | D2-03 DO YOU WORK WITH, USE, OR REFER TO AVAILABLE VOLTAGE | 3 | 2 | 4 | 1 | 3 | 2 | 0 | |
| D 232 | D2-04 DO YOU WORK WITH, USE, OR REFER TO TRANSIENT INTERVALS | 2 | 1 | 4 | 0 | 1 | 2 | 0 | |
| D 233 | D2-05 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE (5) TIME CONSTANTS (TC) | 3 | 2 | 5 | 0 | 1 | 3 | 0 | |
| D 234 | D2-06 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS | 1 | 1 | 1 | 0 | 1 | 2 | 0 | |
| D 235 | D2-07 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUIT CURRENT OR COMPONENT VOLTAGES AFTER A SPECIFIC TIME FOR RC OR LR CIRCUITS | 2 | 2 | 1 | 0 | 1 | 3 | 0 | |
| D 236 | D2-08 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE THE TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT VOLTAGES TO REACH SPECIFIC VALUES FOR RC OR LR CIRCUITS | 1 | 1 | 1 | 0 | 1 | 2 | 0 | |
| D 237 | D2-09 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND COMPONENT VOLTAGES TO REACH SPECIFIC VALUES IN SPECIFIC TIMES | 1 | 1 | 1 | 0 | 1 | 2 | 0 | |
| D 238 | D2-10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IN LR CIRCUITS REACHES ITS MINIMUM VALUE (OR ZERO) AFTER FIVE (5) TIME CONSTANTS | 2 | 2 | 1 | 0 | 1 | 3 | 0 | |
| D 239 | D3-01 DO YOU WORK WITH CIRCUITS USED AS FILTERS IN YOUR PRESENT JOB | 12 | 10 | 17 | 10 | 7 | 17 | 14 | |
| D 240 | D3-02 DO YOU INSPECT FILTER CIRCUITS | 10 | 9 | 14 | 7 | 7 | 14 | 14 | |
| D 241 | D3-03 DO YOU CLEAN FILTER CIRCUITS | 6 | 4 | 11 | 3 | 4 | 6 | 9 | FILTERS |
| D 242 | D3-04 DO YOU ALIGN OR ADJUST FILTER CIRCUITS | 4 | 4 | 4 | 2 | 3 | 9 | 0 | |
| D 243 | D3-05 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT LEVEL | 8 | 8 | 9 | 4 | 6 | 14 | 9 | |
| D 244 | D3-06 DO YOU TROUBLESHOOT TO COMPONENT PARTS | 9 | 7 | 13 | 9 | 3 | 12 | 5 | |
| D 245 | D3-07 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT | 10 | 8 | 14 | 6 | 4 | 15 | 9 | |
| D 246 | D3-08 DO YOU REMOVE OR REPLACE FILTER CIRCUIT COMPONENT PARTS | 6 | 5 | 11 | 4 | 3 | 8 | 5 | |
| D 247 | D3-09 DO YOU WORK WITH LOW PASS FILTERS | 4 | 4 | 7 | 4 | 1 | 6 | 0 | |
| D 248 | D3-10 DO YOU WORK WITH HIGH PASS FILTERS | 4 | 3 | 7 | 2 | 3 | 6 | 0 | |
| D 249 | D3-11 DO YOU WORK WITH BANDPASS FILTERS | 2 | 2 | 1 | 0 | 0 | 5 | 0 | |
| D 250 | D3-12 DO YOU WORK WITH BAND-REJECT FILTERS | 2 | 2 | 3 | 1 | 1 | 5 | 0 | |
| D 251 | D3-13 DON'T REMEMBER WHICH TYPE OF FILTER YOU WORK WITH | 8 | 7 | 12 | 4 | 4 | 12 | 18 | |
| D 252 | D3-14 DO YOU WORK WITH L-SECTION FILTER CONFIGURATION | 3 | 1 | 7 | 1 | 0 | 3 | 0 | |
| D 253 | D3-15 DO YOU WORK WITH T-SECTION FILTER CONFIGURATION | 3 | 3 | 4 | 3 | 0 | 3 | 0 | |
| D 254 | D3-16 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATION | 3 | 2 | 4 | 3 | 0 | 2 | 0 | |
| D 255 | D3-17 DON'T REMEMBER WHICH TYPE FILTER CONFIGURATION | 8 | 7 | 12 | 4 | 4 | 11 | 18 | |
| D 256 | D3-18 DO THE FILTERS YOU WORK WITH USE PARALLEL RESONANT CIRCUITS | 2 | 2 | 3 | 1 | 0 | 5 | 0 | |
| D 257 | D3-19 DO THE FILTERS YOU WORK WITH USE SERIES-PARALLEL CIRCUITS | 5 | 4 | 5 | 3 | 3 | 8 | 0 | |
| D 258 | D3-20 DO THE FILTERS YOU WORK WITH USE SERIES RESONANT CIRCUITS | 3 | 2 | 4 | 2 | 0 | 3 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|---|
| D | 259 | D3-21 DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT | 9 | 8 | 12 | 9 | 6 | 11 | 14 | |
| D | 260 | D3-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC FILTERS | 2 | 2 | 3 | 2 | 1 | 3 | 0 | |
| E | 261 | E1-01 DO YOU WORK WITH COUPLING DEVICES IN YOUR PRESENT JOB | 13 | 12 | 16 | 14 | 10 | 12 | 9 | |
| E | 262 | E1-02 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH RC COUPLING | 8 | 7 | 11 | 4 | 7 | 9 | 9 | |
| E | 263 | E1-03 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH IMPEDANCE COUPLING | 7 | 6 | 11 | 5 | 6 | 9 | 5 | COUPL |
| E | 264 | E1-04 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH TRANSFORMER COUPLING | 11 | 10 | 14 | 13 | 10 | 11 | 5 | |
| E | 265 | E1-05 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM RC COUPLING | 9 | 7 | 12 | 5 | 7 | 9 | 9 | |
| E | 266 | E1-06 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM IMPEDANCE COUPLING | 8 | 6 | 12 | 6 | 6 | 9 | 5 | |
| E | 267 | E1-07 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM TRANSFORMER COUPLING | 11 | 10 | 14 | 14 | 10 | 11 | 0 | |
| E | 268 | E1-08 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS | 10 | 8 | 14 | 11 | 7 | 9 | 9 | |
| E | 269 | E1-09 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS | 8 | 7 | 12 | 6 | 7 | 9 | 5 | |
| E | 270 | E1-10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS | 9 | 7 | 12 | 6 | 7 | 9 | 5 | |
| E | 271 | E1-11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS | 11 | 10 | 14 | 14 | 9 | 12 | 0 | |
| E | 272 | E1-12 DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUITS | 5 | 4 | 7 | 3 | 4 | 5 | 0 | |
| E | 273 | E2-01 IN YOUR PRESENT JOB, DO YOU PERFORM SOLDERING TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS | 92 | 94 | 88 | 89 | 96 | 97 | 100 | |
| E | 274 | E2-02 DO YOU SELECT TYPE OF SOLDER TO USE | 83 | 89 | 78 | 82 | 88 | 83 | 86 | |
| E | 275 | E2-03 DO YOU ADD FLUX TO CONNECTIONS | 93 | 99 | 91 | 90 | 93 | 97 | 100 | SOLDERING |
| E | 276 | E2-04 DO YOU CLEAN CONNECTIONS USING SOLVENTS | 72 | 72 | 70 | 71 | 69 | 79 | 86 | |
| E | 277 | E2-05 DO YOU STRIP INSULATION FROM WIRES | 95 | 96 | 93 | 93 | 97 | 97 | 100 | |
| E | 278 | E2-06 DO YOU CONNECT OR DISCONNECT HEAT SINKS | 71 | 71 | 70 | 68 | 73 | 83 | 91 | |
| E | 279 | E2-07 DO YOU BEND OR SHAPE WIRES OR LEADS | 91 | 93 | 87 | 88 | 90 | 95 | 100 | |
| E | 280 | E2-08 DO YOU CUT WIRES | 95 | 96 | 95 | 94 | 96 | 97 | 100 | |
| E | 281 | E2-09 DO YOU FILE OR SHAPE SOLDERING IRON TIPS | 83 | 89 | 82 | 72 | 90 | 89 | 95 | |
| E | 282 | E2-10 DO YOU TIN SOLDERING IRON TIPS | 94 | 95 | 92 | 91 | 97 | 97 | 100 | |
| E | 283 | E2-11 DO YOU CLEAN SOLDERING IRON TIPS | 94 | 96 | 89 | 90 | 97 | 97 | 100 | |
| E | 284 | E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS | 58 | 59 | 55 | 61 | 48 | 63 | 59 | |
| E | 285 | E2-13 DO YOU TIN OR PRE-TIN CONDUCTORS | 91 | 93 | 87 | 86 | 94 | 97 | 100 | |
| E | 286 | E2-14 DO YOU INSPECT SOLDERED CONNECTIONS | 94 | 95 | 91 | 90 | 99 | 95 | 100 | |
| E | 287 | E2-15 DO YOU DESOLDER CONNECTIONS BY WICKING | 48 | 50 | 43 | 40 | 49 | 57 | 55 | |
| E | 288 | E2-16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING TOOLS | 67 | 68 | 67 | 66 | 57 | 75 | 82 | |
| E | 289 | E2-17 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS | 61 | 69 | 51 | 56 | 52 | 69 | 68 | |
| E | 290 | E2-18 DO YOU CRUSH COMPONENTS FOR REMOVAL | 14 | 14 | 16 | 10 | 9 | 23 | 9 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| E 291 | E2-19 DO YOU MAKE HARDWIRE CONNECTIONS | 79 | 81 | 72 | 73 | 78 | 88 | 82 | |
| E 292 | E2-20 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS | 41 | 46 | 30 | 29 | 37 | 58 | 55 | |
| E 293 | E2-21 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS | 38 | 42 | 28 | 23 | 34 | 55 | 55 | |
| E 294 | E2-22 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS | 36 | 38 | 28 | 20 | 37 | 48 | 45 | |
| E 295 | E3-01 DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB | 78 | 79 | 74 | 76 | 78 | 83 | 86 | |
| E 296 | E3-02 DO YOU ADJUST RELAYS | 14 | 16 | 11 | 11 | 10 | 18 | 18 | |
| E 297 | E3-03 DO YOU CLEAN RELAYS | 32 | 36 | 20 | 36 | 37 | 26 | 23 | |
| E 298 | E3-04 DO YOU INSPECT RELAYS | 60 | 62 | 61 | 57 | 54 | 65 | 64 | |
| E 299 | E3-05 DO YOU REMOVE OR REPLACE COMPLETE RELAYS | 79 | 81 | 79 | 80 | 67 | 88 | 84 | RELAYS |
| E 300 | E3-06 DO YOU REMOVE OR REPLACE PARTS OR RELAYS | 13 | 14 | 11 | 19 | 9 | 14 | 0 | |
| E 301 | E3-07 DO YOU TROUBLESHOOT RELAYS | 77 | 80 | 70 | 80 | 69 | 83 | 82 | |
| E 302 | E3-08 DO YOU STRAIGHTEN RELAY CONTACTS | 28 | 31 | 21 | 35 | 24 | 26 | 23 | |
| E 303 | E3-09 DO YOU PERFORM TASKS ON RELAY CONTACTS | 19 | 21 | 13 | 20 | 25 | 20 | 14 | |
| E 304 | E3-10 DO YOU PERFORM TASKS ON RELAY CORES | 3 | 3 | 1 | 2 | 1 | 3 | 0 | |
| E 305 | E3-11 DO YOU PERFORM TASKS ON RELAY COILS | 3 | 4 | 1 | 3 | 1 | 5 | 0 | |
| E 306 | E3-12 DO YOU PERFORM TASKS ON RELAY ARMATURES | 4 | 4 | 3 | 3 | 1 | 5 | 9 | |
| E 307 | E3-13 DO YOU PERFORM TASKS ON RELAY SPRINGS | 7 | 7 | 4 | 5 | 7 | 8 | 9 | |
| E 308 | E3-14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPER (NO) SCHEMATIC SYMBOLS FOR RELAYS | 52 | 54 | 46 | 44 | 46 | 68 | 59 | |
| E 309 | E3-15 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS | 51 | 53 | 46 | 44 | 43 | 68 | 59 | |
| E 310 | E3-16 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS | 51 | 52 | 46 | 43 | 43 | 68 | 59 | |
| E 311 | E3-17 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS | 52 | 54 | 46 | 45 | 45 | 69 | 55 | |
| E 312 | E3-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC SYMBOLS FOR RELAYS | 54 | 59 | 47 | 47 | 45 | 77 | 64 | |
| E 313 | E3-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE | 50 | 51 | 49 | 41 | 45 | 58 | 55 | |
| F 314 | F1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES | 5 | 4 | 8 | 2 | 6 | 5 | 9 | |
| F 315 | F1-02 DO YOU INSPECT MICROPHONES | 1 | 1 | 3 | 0 | 1 | 2 | 0 | |
| F 316 | F1-03 DO YOU CLEAN MICROPHONES | 1 | 1 | 1 | 0 | 0 | 2 | 0 | MICROPHONES |
| F 317 | F1-04 DO YOU OPERATE MICROPHONES | 4 | 3 | 8 | 2 | 4 | 3 | 9 | |
| F 318 | F1-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OR MICROPHONES | 2 | 2 | 4 | 0 | 1 | 3 | 0 | |
| F 319 | F1-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS | 1 | 1 | 1 | 0 | 0 | 2 | 0 | |
| F 320 | F1-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES | 1 | 1 | 3 | 0 | 1 | 2 | 0 | |
| F 321 | F1-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS | 1 | 1 | 1 | 0 | 0 | 2 | 0 | |
| F 322 | F1-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES | 1 | 1 | 3 | 0 | 1 | 2 | 0 | |
| F 323 | F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| F 324 | F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES | 1 | 1 | 1 | 0 | 0 | 2 | 0 | |
| F 325 | F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES | 1 | 1 | 1 | 0 | 0 | 2 | 0 | |
| F 326 | F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| F 327 | F2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS | 3 | 1 | 8 | 3 | 1 | 2 | 9 | |
| F 328 | F2-02 DO YOU INSPECT SPEAKERS | 1 | 0 | 1 | 0 | 0 | 2 | 0 | SPEAKERS |
| F 329 | F2-03 DO YOU CLEAN SPEAKERS | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| F 330 | F2-04 DO YOU OPERATE SPEAKERS | 3 | 1 | 8 | 3 | 3 | 2 | 5 | |
| F 331 | F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OF SPEAKERS | 1 | 1 | 1 | 0 | 0 | 2 | 0 | |
| F 332 | F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| F 333 | F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| F 334 | F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| F 335 | F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| F 336 | F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| F 337 | F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| F 338 | F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| F 339 | F2-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| F 340 | F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| F 341 | F2-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| F 342 | F3-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB | 56 | 58 | 50 | 37 | 72 | 66 | 84 | |
| F 343 | F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS | 51 | 52 | 47 | 34 | 66 | 58 | 77 | |
| F 344 | F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS | 42 | 43 | 38 | 30 | 49 | 48 | 77 | OSCILLOSCOPES |
| F 345 | F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS | 48 | 49 | 45 | 29 | 61 | 58 | 82 | |
| F 346 | F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY | 38 | 39 | 37 | 29 | 46 | 43 | 68 | |
| F 347 | F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME | 24 | 23 | 26 | 15 | 28 | 22 | 50 | |
| F 348 | F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS | 32 | 33 | 30 | 19 | 30 | 45 | 68 | |
| F 349 | F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES | 20 | 23 | 13 | 10 | 21 | 32 | 32 | |
| F 350 | F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS | 15 | 15 | 13 | 10 | 18 | 17 | 27 | |
| F 351 | F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE | 43 | 44 | 41 | 32 | 60 | 49 | 59 | |
| F 352 | F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS | 26 | 26 | 25 | 19 | 36 | 31 | 32 | |
| F 353 | F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE | 36 | 38 | 30 | 23 | 49 | 45 | 45 | |
| G 354 | G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB | 41 | 43 | 34 | 30 | 60 | 38 | 55 | |
| G 355 | G1-02 DO YOU INSPECT DIODES | 38 | 41 | 28 | 28 | 57 | 37 | 45 | |
| G 356 | G1-03 DO YOU REMOVE OR REPLACE DIODES | 36 | 39 | 29 | 29 | 52 | 37 | 55 | SEMICONDUCTOR |
| G 357 | G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT | 34 | 36 | 28 | 23 | 51 | 39 | 41 | DIODES |
| G 358 | G1-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES | 2 | 2 | 3 | 0 | 4 | 3 | 0 | |
| G 359 | G1-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, TO COMPUTE FORWARD OR REVERSE LIAS RESISTANCE | 4 | 4 | 7 | 1 | 7 | 5 | 0 | |
| G 360 | G1-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES | 7 | 7 | 5 | 3 | 10 | 8 | 5 | |

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 |
|---|---|---|---|---|---|---|---|---|
| G 361 | 61-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES | 18 | 18 | 18 | 17 | 19 | 20 | 9 |
| G 362 | 61-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON THEIR PHYSICAL APPEARANCE | 30 | 31 | 26 | 24 | 48 | 31 | 32 |
| G 363 | 61-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW | 4 | 4 | 4 | 1 | 4 | 2 | 0 |
| G 364 | 61-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE | 14 | 14 | 12 | 6 | 28 | 12 | 5 |
| G 365 | 61-12 DO YOU USE OR REFER TO DIODE COLOR CODING | 10 | 11 | 5 | 6 | 18 | 8 | 0 |
| G 366 | 61-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS | 1 | 1 | 1 | 0 | 1 | 2 | 0 |
| G 367 | 61-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS | 1 | 1 | 1 | 0 | 0 | 2 | 0 |
| G 368 | 61-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN 538 | 14 | 15 | 12 | 11 | 22 | 12 | 14 |
| G 369 | 61-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT | 2 | 2 | 1 | 1 | 0 | 2 | 0 |
| G 370 | 61-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT | 2 | 2 | 1 | 1 | 0 | 2 | 0 |
| G 371 | 61-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE | 13 | 14 | 12 | 6 | 27 | 12 | 9 |
| G 372 | 61-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT | 1 | 1 | 1 | 1 | 0 | 2 | 0 |
| G 373 | 61-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON | 1 | 1 | 1 | 1 | 0 | 2 | 0 |
| G 374 | 61-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON | 1 | 1 | 1 | 1 | 0 | 2 | 0 |
| G 375 | 61-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL) | 2 | 2 | 3 | 1 | 1 | 2 | 0 |
| G 376 | 61-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM) | 1 | 1 | 1 | 1 | 0 | 2 | 0 |
| G 377 | 61-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END | 27 | 29 | 22 | 20 | 40 | 25 | 32 |
| G 378 | 61-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON | 5 | 5 | 5 | 4 | 3 | 8 | 5 |
| G 379 | 61-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE INCREASES RESISTANCE DECREASES) | 12 | 12 | 11 | 10 | 10 | 12 | 9 |
| G 380 | 61-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT CHARACTERISTIC CURVES (PERHAPS YOU DO THIS TO IDENTIFY POINTS OF STRUCTURAL BREAKDOWN OR OPERATING REGIONS) | 3 | 3 | 5 | 1 | 9 | 2 | 0 |
| G 381 | 61-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR INTERPRET CIRCUIT DIAGRAMS | 15 | 15 | 14 | 7 | 27 | 14 | 14 |
| G 382 | 61-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS | 2 | 2 | 3 | 1 | 3 | 3 | 0 |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| G 383 | 61-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS | 2 | 2 | 1 | 0 | 1 | 3 | 0 | |
| G 384 | 61-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS | 2 | 2 | 1 | 0 | 1 | 2 | 0 | |
| G 385 | 61-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS | 1 | 1 | 1 | 0 | 1 | 2 | 0 | |
| G 386 | 61-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS | 1 | 1 | 1 | 0 | 1 | 0 | 0 | |
| G 387 | 61-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS | 4 | 4 | 3 | 1 | 4 | 3 | 0 | |
| G 388 | 61-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS | 1 | 1 | 1 | 0 | 1 | 0 | 0 | |
| G 389 | 61-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS | 1 | 1 | 1 | 0 | 1 | 0 | 0 | |
| G 390 | 61-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL | 6 | 5 | 9 | 2 | 6 | 6 | 5 | |
| G 391 | 61-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL | 6 | 5 | 9 | 2 | 6 | 6 | 5 | |
| G 392 | 61-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS | 3 | 2 | 5 | 2 | 3 | 0 | 0 | |
| G 393 | 61-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS | 3 | 2 | 5 | 2 | 3 | 0 | 0 | |
| G 394 | 61-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS | 1 | 1 | 1 | 0 | 1 | 0 | 0 | |
| G 395 | 61-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS | 1 | 1 | 1 | 0 | 1 | 2 | 0 | |
| G 396 | 61-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL | 2 | 2 | 3 | 1 | 1 | 2 | 0 | |
| G 397 | 61-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES | 5 | 4 | 7 | 4 | 7 | 2 | 5 | |
| G 398 | 61-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS | 1 | 1 | 1 | 1 | 0 | 2 | 0 | |
| G 399 | 61-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION | 7 | 6 | 9 | 4 | 7 | 0 | 5 | |
| G 400 | 61-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS | 2 | 3 | 1 | 2 | 1 | 2 | 0 | |
| G 401 | 61-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS | 2 | 2 | 3 | 1 | 3 | 2 | 0 | |
| G 402 | 61-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS | 3 | 3 | 3 | 3 | 1 | 2 | 0 | |
| G 403 | 61-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS | 4 | 4 | 1 | 2 | 4 | 3 | 0 | |
| G 404 | 62-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB. | 30 | 31 | 28 | 20 | 34 | 29 | 45 | |
| G 405 | 62-02 DO YOU INSPECT TRANSISTORS | 28 | 29 | 25 | 19 | 34 | 25 | 41 | |
| G 406 | 62-03 DO YOU REMOVE OR REPLACE TRANSISTORS | 20 | 20 | 21 | 11 | 18 | 22 | 32 | TRANSISTORS |
| G 407 | 62-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT | 20 | 20 | 21 | 12 | 24 | 12 | 36 | |
| G 408 | 62-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS | 16 | 16 | 17 | 11 | 19 | 9 | 18 | |
| G 409 | 62-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS | 16 | 16 | 17 | 11 | 21 | 8 | 18 | |

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS GPSUM6 PAGE 16

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| G 410 | 62-07 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC) RESISTANCE MEASUREMENTS | 14 | 16 | 16 | 10 | 21 | 8 | 18 | |
| G 411 | 62-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION | 7 | 6 | 11 | 6 | 3 | 3 | 14 | |
| G 412 | 62-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION | 7 | 6 | 11 | 5 | 3 | 3 | 14 | |
| G 413 | 62-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER) | 11 | 11 | 12 | 6 | 15 | 6 | 9 | |
| G 414 | 62-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR | 4 | 4 | 5 | 2 | 0 | 3 | 9 | |
| G 415 | 62-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS | 24 | 27 | 24 | 20 | 31 | 23 | 27 | |
| G 416 | 62-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC | 25 | 25 | 25 | 19 | 30 | 22 | 36 | |
| G 417 | 62-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION | 9 | 8 | 13 | 7 | 9 | 5 | 9 | |
| G 418 | 62-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IB IS NORMALLY SIGNIFICANTLY SMALLER THAN THE EMITTER CURRENT IE (USUALLY IB BEING 2 TO 8 PERCENT OF IE) | 6 | 6 | 5 | 5 | 1 | 6 | 0 | |
| G 419 | 62-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR TRANSISTORS | 9 | 8 | 11 | 4 | 10 | 6 | 5 | |
| G 420 | 62-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (ICBO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES | 5 | 5 | 4 | 2 | 6 | 3 | 5 | |
| G 421 | 62-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES | 2 | 1 | 4 | 1 | 1 | 2 | 0 | |
| G 422 | 62-19 DO YOU USE OR REFER TO BETA TRANSISTOR GAINS | 3 | 3 | 3 | 2 | 1 | 2 | 5 | |
| G 423 | 62-20 DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS | 3 | 3 | 3 | 1 | 1 | 2 | 5 | |
| G 424 | 62-21 DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS | 3 | 3 | 3 | 1 | 1 | 2 | 5 | |
| G 425 | 62-22 DO YOU CALCULATE BETA TRANSISTOR GAINS | 1 | 0 | 3 | 1 | 0 | 0 | 0 | |
| G 426 | 62-23 DO YOU CALCULATE ALPHA TRANSISTOR GAINS | 1 | 0 | 3 | 1 | 0 | 0 | 0 | |
| G 427 | 62-24 DO YOU CALCULATE GAMMA TRANSISTOR GAINS | 1 | 0 | 3 | 1 | 0 | 0 | 0 | |
| G 428 | 63-01 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB | 25 | 22 | 33 | 29 | 18 | 20 | 36 | |
| G 429 | 63-02 DO YOU INSPECT TRANSISTOR AMPLIFIERS | 21 | 20 | 26 | 23 | 16 | 17 | 32 | TRANSISTOR AMPLIFIERS |
| G 430 | 63-03 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS | 12 | 10 | 17 | 15 | 6 | 8 | 14 | |
| G 431 | 63-04 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL | 15 | 13 | 20 | 14 | 12 | 15 | 18 | |
| G 432 | 63-05 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS | 14 | 13 | 16 | 15 | 9 | 12 | 18 | |
| G 433 | 63-06 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER | 23 | 20 | 32 | 28 | 13 | 20 | 32 | |
| G 434 | 63-07 DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS | 9 | 8 | 11 | 5 | 4 | 9 | 9 | |
| G 435 | 63-08 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE CURRENT | 2 | 1 | 4 | 1 | 0 | 0 | 0 | |
| G 436 | 63-09 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT | 1 | 0 | 3 | 0 | 0 | 0 | 5 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 |
|---|---|---|---|---|---|---|---|---|
| G 437 | 63-10 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE CURRENT | 2 | 1 | 4 | 1 | 1 | 0 | 0 |
| G 438 | 63-11 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT | 2 | 2 | 3 | 3 | 1 | 0 | 0 |
| G 439 | 63-12 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL | 3 | 2 | 7 | 2 | 1 | 0 | 0 |
| G 440 | 63-13 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN BASE CURRENT WHICH RESULTS FROM A SPECIFIC INPUT SIGNAL | 2 | 2 | 1 | 1 | 1 | 0 | 0 |
| G 441 | 63-14 DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A LOAD-LINE ON A TRANSISTOR CHARACTERISTIC CURVE) | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| G 442 | 63-15 DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR | 2 | 1 | 3 | 1 | 0 | 0 | 0 |
| G 443 | 63-16 DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| G 444 | 63-17 DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION | 7 | 7 | 8 | 6 | 4 | 6 | 5 |
| G 445 | 63-18 DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION | 6 | 5 | 7 | 5 | 3 | 5 | 5 |
| G 446 | 63-19 DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION | 5 | 4 | 5 | 4 | 3 | 3 | 5 |
| G 447 | 63-20 DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE-EMITTER VOLTAGE INTO THE CHANGE THE BASE COLLECTOR VOLTAGE TO DETERMINE THE VOLTAGE GAIN | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| G 448 | 63-21 DO YOU CALCULATE THE CURRENT GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE CURRENT INTO THE CHANGE IN COLLECTOR CURRENT TO DETERMINE THE CURRENT GAIN | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| G 449 | 63-22 DO YOU CALCULATE THE POWER GAIN FOR A SPECIFIC TRANSISTOR USING A FORMULA THAT IS, DO YOU MULTIPLY THE CURRENT GAIN TIMES THE VOLTAGE GAIN TO DETERMINE THE POWER GAIN | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| G 450 | 63-23 DO YOU NEED TO KNOW THAT MORE COLLECTOR CURRENT IS GENERATED WITH LESS COLLECTOR VOLTAGE AS TEMPERATURE INCREASES (THIS AFFECTS THE STATIC OPERATING POINT (Q) OF THE TRANSISTOR) | 2 | 2 | 1 | 1 | 1 | 2 | 0 |
| G 451 | 63-24 DO YOU COMPUTE THE STATIC OPERATING POINT (Q) OF A TRANSISTOR AT DIFFERENT TEMPERATURES | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| G 452 | 63-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH EMITTER (SWAMPING) RESISTOR STABILIZATION | 3 | 3 | 3 | 3 | 3 | 0 | 0 |
| G 453 | 63-26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF-BIAS STABILIZATION | 3 | 2 | 4 | 3 | 0 | 0 | 0 |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 |
|---|---|---|---|---|---|---|---|---|
| G 454 | 63-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH THERMISTOR STABILIZATION | 3 | 3 | 4 | 3 | 0 | 3 | 0 |
| G 455 | 63-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH FORWARD BIAS DIODE STABILIZATION | 3 | 3 | 4 | 3 | 0 | 3 | 0 |
| G 456 | 63-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH REVERSE BIAS DIODE STABILIZATION | 3 | 3 | 4 | 3 | 0 | 3 | 0 |
| G 457 | 63-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH DOUBLE DIODE STABILIZATION | 2 | 2 | 3 | 3 | 0 | 0 | 0 |
| G 458 | 63-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER (SWAMPING) RESISTOR STABILIZATION | 4 | 3 | 7 | 3 | 3 | 0 | 5 |
| G 459 | 63-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION | 3 | 3 | 4 | 3 | 0 | 0 | 0 |
| G 460 | 63-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION | 4 | 3 | 5 | 4 | 1 | 2 | 5 |
| G 461 | 63-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION | 4 | 4 | 4 | 3 | 1 | 5 | 0 |
| G 462 | 63-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION | 3 | 3 | 4 | 2 | 1 | 3 | 0 |
| G 463 | 63-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION | 3 | 2 | 5 | 4 | 1 | 0 | 0 |
| G 464 | 63-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS | 2 | 1 | 3 | 1 | 0 | 3 | 0 |
| G 465 | 63-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION | 4 | 4 | 4 | 3 | 0 | 5 | 0 |
| G 466 | 63-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS | 2 | 2 | 1 | 1 | 0 | 2 | 0 |
| G 467 | 63-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS | 3 | 2 | 7 | 2 | 0 | 2 | 0 |
| G 468 | 63-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION | 2 | 2 | 3 | 1 | 0 | 3 | 0 |
| G 469 | 63-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION | 2 | 2 | 3 | 1 | 0 | 2 | 0 |
| G 470 | 63-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR TRANSISTOR AMPLIFIERS IN THE COMMON COLLECTOR CONFIGURATION | 2 | 2 | 1 | 1 | 1 | 3 | 0 |
| G 471 | 63-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS | 3 | 3 | 4 | 2 | 4 | 0 | 0 |
| G 472 | 63-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS | 3 | 3 | 4 | 2 | 1 | 2 | 0 |
| G 473 | 63-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS | 9 | 9 | 9 | 7 | 9 | 8 | 5 |
| G 474 | 63-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS | 4 | 4 | 3 | 4 | 4 | 2 | 0 |
| G 475 | 63-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS | 4 | 4 | 3 | 2 | 6 | 3 | 0 |

PCT NBRS RESPONDING 'YES' BY SELECTED GRPS  6PSUM6 PAGE 19

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | DY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|---|
| G | 476 | G3-99 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS | 5 | 5 | 7 | 5 | 9 | 3 | 0 | |
| M | 477 | H1-01 DO YOU USE OR REFER TO VARACTORS | 5 | 9 | 7 | 5 | 9 | 0 | 5 | |
| M | 478 | H1-02 DO YOU USE OR REFER TO TUNNEL DIODES | 7 | 8 | 9 | 6 | 6 | 8 | 5 | SOLID-STATE |
| M | 479 | H1-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET) | 9 | 7 | 12 | 10 | 3 | 6 | 9 | SPECIAL PURPOSE |
| M | 480 | H1-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS | 9 | 9 | 5 | 6 | 3 | 0 | 5 | DEVICES |
| M | 481 | H1-05 DO YOU USE OR REFER TO ZENER DIODES | 23 | 23 | 21 | 29 | 18 | 15 | 27 | |
| M | 482 | H1-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS | 36 | 36 | 37 | 32 | 40 | 37 | 36 | |
| M | 483 | H2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES | 61 | 63 | 64 | 65 | 70 | 62 | 68 | |
| M | 484 | H2-02 DO YOU INSPECT POWER SUPPLIES | 61 | 69 | 92 | 48 | 57 | 64 | 59 | |
| M | 485 | H2-03 DO YOU CLEAN POWER SUPPLIES | 31 | 33 | 29 | 29 | 30 | 29 | 32 | POWER SUPPLIES |
| M | 486 | H2-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES | 22 | 29 | 18 | 18 | 18 | 20 | 32 | |
| M | 487 | H2-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL | 38 | 40 | 39 | 33 | 33 | 48 | 55 | |
| M | 488 | H2-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS | 35 | 36 | 30 | 26 | 28 | 45 | 45 | |
| M | 489 | H2-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES | 60 | 62 | 51 | 51 | 70 | 65 | 59 | |
| M | 490 | H2-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS | 29 | 25 | 21 | 22 | 13 | 31 | 27 | |
| M | 491 | H2-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS | 12 | 11 | 13 | 11 | 9 | 5 | 9 | |
| M | 492 | H2-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS | 19 | 19 | 19 | 11 | 9 | 11 | 18 | |
| M | 493 | H2-11 DO YOU WORK WITH BRIDGE RECTIFIERS | 19 | 19 | 18 | 18 | 13 | 15 | 32 | |
| M | 494 | H2-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS | 13 | 11 | 18 | 12 | 9 | 8 | 23 | |
| M | 495 | H2-13 DO YOU USE OR REFER TO INPUT VOLTAGE | 27 | 30 | 18 | 21 | 28 | 34 | 23 | |
| M | 496 | H2-14 DO YOU USE OR REFER TO INPUT FREQUENCY | 15 | 16 | 13 | 15 | 9 | 18 | 9 | |
| M | 497 | H2-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE | 18 | 18 | 17 | 12 | 16 | 23 | 23 | |
| M | 498 | H2-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE | 20 | 21 | 18 | 16 | 15 | 25 | 23 | |
| M | 499 | H2-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE | 7 | 7 | 8 | 2 | 6 | 9 | 5 | |
| M | 500 | H2-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY | 6 | 5 | 8 | 3 | 3 | 6 | 5 | |
| M | 501 | H2-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE | 6 | 6 | 5 | 5 | 3 | 6 | 5 | |
| M | 502 | H2-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS | 12 | 11 | 13 | 9 | 7 | 15 | 14 | |
| M | 503 | H2-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE | 20 | 22 | 13 | 15 | 24 | 26 | 14 | |
| M | 504 | H2-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS | 17 | 16 | 18 | 12 | 19 | 14 | 14 | |
| M | 505 | H2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS | 13 | 12 | 14 | 6 | 16 | 9 | 14 | |
| M | 506 | H2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS | 9 | 9 | 8 | 9 | 12 | 6 | 9 | |
| M | 507 | H2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS | 7 | 8 | 5 | 9 | 9 | 6 | 9 | |
| M | 508 | H2-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS | 7 | 7 | 5 | 3 | 7 | 6 | 9 | |
| M | 509 | H2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS | 8 | 8 | 7 | 5 | 7 | 6 | 9 | |
| M | 510 | H2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY DON'T REMEMBER WHICH TYPE OF FILTER | 17 | 17 | 17 | 11 | 18 | 20 | 27 | |
| M | 511 | H2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| M | 512 | H3-01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB | 6 | 5 | 7 | 3 | 6 | 6 | 9 | OSCILLATORS |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| M 513 | M3-02 DO YOU INSPECT OSCILLATORS | 4 | 3 | 8 | 1 | 4 | 3 | 14 | |
| M 514 | M3-03 DO YOU ALIGN OR ADJUST OSCILLATORS | 2 | 2 | 4 | 0 | 1 | 3 | 9 | |
| M 515 | M3-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS | 2 | 1 | 5 | 0 | 0 | 3 | 9 | |
| M 516 | M3-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS | 1 | 0 | 4 | 0 | 0 | 0 | 5 | |
| M 517 | M3-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL | 2 | 1 | 3 | 0 | 1 | 2 | 0 | |
| M 518 | M3-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS | 2 | 2 | 3 | 0 | 1 | 3 | 0 | |
| M 519 | M3-08 DO YOU USE OR REFER TO FEEDBACK | 4 | 3 | 8 | 1 | 1 | 6 | 9 | |
| M 520 | M3-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD) | 2 | 1 | 4 | 0 | 0 | 3 | 0 | |
| M 521 | M3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY | 2 | 1 | 4 | 0 | 0 | 3 | 0 | |
| M 522 | M3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY | 3 | 2 | 5 | 0 | 1 | 5 | 5 | |
| M 523 | M3-12 DO YOU USE OR REFER TO DAMPING | 2 | 2 | 4 | 2 | 1 | 3 | 0 | |
| M 524 | M3-13 DO YOU USE OR REFER TO REGENERATIVE FEEDBACK | 2 | 1 | 4 | 0 | 1 | 3 | 5 | |
| M 525 | M3-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT | 1 | 1 | 1 | 0 | 0 | 2 | 5 | |
| M 526 | M3-15 DO YOU USE OR REFER TO CRITICAL DAMPING | 1 | 1 | 1 | 0 | 0 | 2 | 5 | |
| M 527 | M3-16 DO YOU USE OR REFER TO UNDER DAMPING | 1 | 1 | 1 | 1 | 0 | 2 | 0 | |
| M 528 | M3-17 DO YOU USE OR REFER TO OVER DAMPING | 1 | 1 | 1 | 1 | 0 | 2 | 0 | |
| M 529 | M3-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK CIRCUITS AS FDD | 2 | 2 | 4 | 1 | 1 | 2 | 5 | |
| M 530 | M3-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS FDD | 2 | 2 | 4 | 0 | 1 | 3 | 5 | |
| M 531 | M3-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS FDD | 1 | 1 | 1 | 0 | 0 | 3 | 0 | |
| M 532 | M3-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD | 2 | 2 | 4 | 2 | 0 | 2 | 0 | |
| M 533 | M3-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| M 534 | M3-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| M 535 | M3-24 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| M 536 | M3-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| M 537 | M3-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| M 538 | M3-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF OSCILLATORS | 2 | 2 | 3 | 2 | 1 | 2 | 0 | |
| I 539 | I1-01 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB | 3 | 3 | 4 | 0 | 4 | 5 | 5 | |
| I 540 | I1-02 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS | 2 | 2 | 4 | 0 | 1 | 5 | 5 | |
| I 541 | I1-03 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS | 2 | 2 | 4 | 0 | 1 | 5 | 5 | MULTIVIBRATORS |
| I 542 | I1-04 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS | 2 | 2 | 4 | 0 | 1 | 5 | 5 | |
| I 543 | I1-05 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS | 2 | 2 | 4 | 0 | 1 | 5 | 5 | |
| I 544 | I1-06 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS | 2 | 1 | 3 | 0 | 0 | 3 | 0 | |
| I 545 | I1-07 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS | 2 | 2 | 4 | 0 | 1 | 5 | 0 | |
| I 546 | I1-08 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING COMPONENTS | 1 | 1 | 3 | 0 | 0 | 2 | 0 | |
| I 547 | I1-09 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUITS | 1 | 1 | 1 | 0 | 1 | 2 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| I 548 | 11-10 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC NETWORKS | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| I 549 | 11-11 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN CRYSTALS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| I 550 | 11-12 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T REMEMBER WHICH TYPE OF FDD | 2 | 2 | 1 | 0 | 3 | 3 | 0 | |
| I 551 | 11-13 DO YOU WORK WITH ASTABLE MULTIVIBRATORS | 1 | 1 | 1 | 0 | 1 | 0 | 0 | |
| I 552 | 11-14 DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS | 1 | 1 | 1 | 0 | 3 | 0 | 0 | |
| I 553 | 11-15 DO YOU WORK WITH BISTABLE MULTIVIBRATORS | 1 | 1 | 1 | 0 | 3 | 0 | 0 | |
| I 554 | 11-16 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE MULTIVIBRATORS | 2 | 2 | 3 | 0 | 1 | 5 | 0 | |
| I 555 | 12-01 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB | 3 | 3 | 4 | 2 | 3 | 5 | 0 | |
| I 556 | 12-02 DO YOU WORK WITH SERIES DIODE LIMITERS | 2 | 1 | 3 | 0 | 1 | 2 | 0 | |
| I 557 | 12-03 DO YOU WORK WITH SHUNT DIODE LIMITERS | 1 | 1 | 1 | 0 | 1 | 0 | 0 | LIMITERS AND |
| I 558 | 12-04 DO YOU WORK WITH LIMITERS WITH BIAS | 1 | 1 | 3 | 0 | 1 | 0 | 0 | CLAMPERS |
| I 559 | 12-05 DO YOU WORK WITH ZENER DIODE LIMITERS | 2 | 1 | 3 | 0 | 3 | 0 | 2 | |
| I 560 | 12-06 DO YOU WORK WITH TRANSISTOR LIMITERS | 1 | 1 | 3 | 0 | 1 | 0 | 0 | |
| I 561 | 12-07 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS | 2 | 2 | 3 | 1 | 0 | 5 | 0 | |
| I 562 | 12-08 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS | 2 | 1 | 3 | 1 | 1 | 0 | 0 | |
| I 563 | 12-09 DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS | 2 | 1 | 3 | 1 | 1 | 0 | 0 | |
| I 564 | 12-10 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING CIRCUIT | 2 | 2 | 3 | 1 | 0 | 5 | 0 | |
| I 565 | 13-01 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS ELECTRON TUBES | 16 | 20 | 5 | 9 | 9 | 11 | 23 | |
| I 566 | 13-02 DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD | 14 | 17 | 4 | 6 | 4 | 12 | 23 | |
| I 567 | 13-03 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES | 13 | 15 | 4 | 6 | 3 | 11 | 23 | ELECTRON TUBES |
| I 568 | 13-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES | 7 | 8 | 4 | 4 | 4 | 3 | 9 | |
| I 569 | 13-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES | 3 | 4 | 3 | 1 | 1 | 2 | 14 | |
| I 570 | 13-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES | 11 | 13 | 4 | 5 | 4 | 6 | 14 | |
| I 571 | 13-07 DO YOU USE OR REFER TO CUTOFF | 4 | 4 | 3 | 3 | 0 | 2 | 0 | |
| I 572 | 13-08 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING | 2 | 2 | 3 | 1 | 0 | 2 | 0 | |
| I 573 | 13-09 DO YOU USE OR REFER TO PEAK CURRENT RATING | 3 | 3 | 3 | 1 | 0 | 3 | 0 | |
| I 574 | 13-10 DO YOU USE OR REFER TO TRANSIT TIME | 3 | 3 | 3 | 1 | 1 | 2 | 0 | |
| I 575 | 13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING | 3 | 4 | 1 | 2 | 0 | 3 | 0 | |
| I 576 | 13-12 DO YOU USE OR REFER TO SATURATION | 4 | 4 | 1 | 2 | 0 | 3 | 0 | |
| I 577 | 13-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE | 3 | 4 | 1 | 1 | 1 | 3 | 0 | |
| I 578 | 13-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE RESISTANCE FOR ELECTRON TUBES | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| I 579 | 13-15 DO YOU USE OR REFER TO PLATE VOLTAGE | 6 | 7 | 4 | 4 | 3 | 5 | 5 | |
| I 580 | 13-16 DO YOU USE OR REFER TO PLATE CURRENT | 6 | 6 | 4 | 4 | 3 | 3 | 5 | |
| I 581 | 13-17 DO YOU USE OR REFER TO GRID VOLTAGE | 6 | 7 | 3 | 3 | 3 | 3 | 5 | |
| I 582 | 13-18 DO YOU USE OR REFER TO GRID CURRENT | 5 | 6 | 3 | 2 | 3 | 3 | 5 | |
| I 583 | 13-19 DO YOU USE OR REFER TO CATHODE VOLTAGE | 6 | 7 | 3 | 3 | 1 | 3 | 5 | |
| I 584 | 13-20 DO YOU USE OR REFER TO CATHODE CURRENT | 5 | 5 | 3 | 2 | 1 | 3 | 5 | |
| I 585 | 13-21 DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS THE RATIO OF CHANGE IN PLATE VOLTAGE TO A CHANGE IN GRID VOLTAGE) | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| I 586 | I3-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE AMPLIFICATION FACTORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| I 587 | I3-23 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC) AMPLIFICATION FACTORS | 1 | 1 | 3 | 2 | 0 | 0 | 0 | |
| I 588 | I3-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSCONDUCTANCE (G, WHICH IS MEASURED IN MHOS) | 1 | 0 | 3 | 1 | 0 | 0 | 0 | |
| I 589 | I3-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE TRANSCONDUCTANCES | 1 | 0 | 3 | 1 | 0 | 0 | 0 | |
| I 590 | I3-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE | 1 | 1 | 3 | 1 | 0 | 0 | 0 | |
| I 591 | I3-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE RESISTANCE | 1 | 0 | 3 | 1 | 0 | 0 | 0 | |
| I 592 | I3-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE | 1 | 1 | 3 | 1 | 1 | 0 | 0 | |
| I 593 | I3-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| I 594 | I3-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE VOLTAGE FOR A SPECIFIED BIAS | 1 | 0 | 3 | 1 | 0 | 0 | 0 | |
| I 595 | I3-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS | 1 | 1 | 3 | 2 | 0 | 0 | 0 | |
| I 596 | I3-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| I 597 | I3-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| I 598 | I3-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN | 4 | 4 | 3 | 3 | 1 | 2 | 0 | |
| I 599 | I3-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY | 3 | 3 | 3 | 2 | 1 | 2 | 0 | |
| I 600 | I3-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN | 8 | 10 | 3 | 4 | 3 | 8 | 14 | |
| I 601 | I3-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN | 3 | 3 | 3 | 3 | 1 | 0 | 0 | |
| I 602 | I3-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN | 2 | 2 | 3 | 2 | 1 | 0 | 0 | |
| I 603 | I3-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| I 604 | I3-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE | 1 | 1 | 3 | 1 | 1 | 0 | 0 | |
| I 605 | I3-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION | 8 | 10 | 1 | 1 | 3 | 6 | 14 | |
| I 606 | I3-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS | 9 | 11 | 1 | 3 | 3 | 8 | 9 | |
| I 607 | I3-43 DO YOU USE OR REFER TO THE TYPE OF MATERIAL OR THE OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE ELECTRON TUBES YOU WORK ON | 1 | 1 | 1 | 0 | 0 | 0 | 5 | |
| I 608 | I3-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS | 5 | 6 | 3 | 3 | 0 | 3 | 9 | |
| J 609 | J1-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB | 7 | 8 | 1 | 3 | 1 | 6 | 5 | ELECTRON TUBE AMPLIFIERS AND CIRCUITS |
| J 610 | J1-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| J 611 | J1-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| J 612 | J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS | 2 | 2 | 1 | 1 | 0 | 0 | 5 | |
| J 613 | J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS | 1 | 1 | 1 | 1 | 0 | 0 | 0 | |
| J 614 | J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS | 1 | 1 | 1 | 1 | 0 | 0 | 0 | |
| J 615 | J1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER | 9 | 5 | 1 | 2 | 1 | 6 | 0 | |
| J 616 | J2-01 DO YOU WORK WITH GAS TUBES (HOT CATHODE OR COLD CATHODE) | 9 | 9 | 1 | 2 | 1 | 3 | 0 | |
| J 617 | J2-02 DO YOU WORK WITH CATHODE-RAY TUBES | 9 | 5 | 1 | 2 | 9 | 3 | 5 | SPECIAL PURPOSE ELECTRON TUBES |
| J 618 | J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| J 619 | J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED | 1 | 1 | 1 | 1 | 0 | 0 | 0 | |
| J 620 | J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYRATRONS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| J 621 | J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATRONS ARE USED | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| J 622 | J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT) | 1 | 1 | 3 | 0 | 1 | 0 | 0 | |
| J 623 | J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT) | 1 | 0 | 3 | 0 | 1 | 0 | 0 | |
| J 624 | J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT) | 1 | 0 | 3 | 0 | 1 | 0 | 0 | |
| J 625 | J2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS | 2 | 2 | 3 | 1 | 3 | 0 | 0 | |
| J 626 | J2-11 DO YOU USE OR REFER TO AQUADAG COATINGS | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| J 627 | J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS | 1 | 0 | 3 | 0 | 1 | 0 | 0 | |
| J 628 | J2-13 DO YOU USE OR REFER TO PERSISTENCE | 1 | 1 | 1 | 0 | 1 | 0 | 0 | |
| J 629 | J2-14 DO YOU USE OR REFER TO DECAY TIMES | 1 | 0 | 3 | 0 | 1 | 0 | 0 | |
| J 630 | J2-15 DO YOU USE OR REFER TO FLUORESCENCE | 1 | 1 | 3 | 0 | 3 | 0 | 0 | |
| J 631 | J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE | 1 | 1 | 3 | 1 | 1 | 0 | 0 | |
| J 632 | J3-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB | 2 | 1 | 3 | 2 | 0 | 2 | 0 | |
| J 633 | J3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS | 1 | 0 | 1 | 0 | 0 | 2 | 0 | HETERODYNING, MODULATION, AND DEMODULATION |
| J 634 | J3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| J 635 | J3-04 DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| J 636 | J3-05 DO YOU PERFORM TASKS ON REACTANCE MODULATORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| J 637 | J3-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 638 | K1-01 DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 639 | K1-02 DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 640 | K1-03 DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | AM SYSTEMS |
| K 641 | K1-04 DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| K 642 | K1-03 DO YOU TROUBLESHOOT TO AN TRANSMIT OR RECEIVE SYSTEMS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 643 | K1-04 DO YOU TROUBLESHOOT TO AN TRANSMIT OR RECEIVE COMPONENTS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 644 | K1-07 DO YOU REMOVE OR REPLACE AN TRANSMIT OR RECEIVE SYSTEMS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 645 | K1-08 DO YOU REMOVE OR REPLACE AN TRANSMIT OR RECEIVE COMPONENTS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 646 | K1-09 DO YOU PERFORM TASKS ON RF OSCILLATORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 647 | K1-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 648 | K1-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 649 | K1-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 650 | K1-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 651 | K1-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 652 | K1-15 DO YOU PERFORM TASKS ON DETECTORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 653 | K1-16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 654 | K1-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 655 | K1-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 656 | K1-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 657 | K1-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 658 | K1-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 659 | K1-22 DO YOU USE OR REFER TO BANDPASS DISTORTION | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 660 | K1-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 661 | K1-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 662 | K1-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 663 | K1-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR IMAGE REJECTION RATIOS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 664 | K1-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AN TRANSMITTER SCHEMATIC DIAGRAMS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 665 | K1-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AN RECEIVER SCHEMATIC DIAGRAMS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 666 | K2-01 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB | 1 | 0 | 3 | 2 | 0 | 0 | 0 | |
| K 667 | K2-02 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | FM SYSTEMS |
| K 668 | K2-03 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 669 | K2-04 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 670 | K2-05 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS | 1 | 0 | 3 | 1 | 0 | 0 | 0 | |
| K 671 | K2-06 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS | 1 | 0 | 3 | 1 | 0 | 0 | 0 | |
| K 672 | K2-07 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 673 | K2-08 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 674 | K2-09 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 675 | K2-10 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS RESPONDING

| | QY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| K 676 | K2-11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 677 | K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 678 | K2-13 DO YOU PERFORM TASKS ON RF AMPLIFIERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 679 | K2-14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 680 | K2-15 DO YOU PERFORM TASKS ON IF AMPLIFIERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 681 | K2-16 DO YOU PERFORM TASKS ON LIMITERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 682 | K2-17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 683 | K2-18 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| K 684 | K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS | 1 | 0 | 3 | 1 | 0 | 0 | 0 | |
| K 685 | K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS | 8 | 9 | 9 | 7 | 9 | 2 | 5 | |
| K 686 | K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS | 14 | 13 | 16 | 14 | 16 | 8 | 9 | NUMBERING SYSTEMS |
| K 687 | K3-03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS | 3 | 3 | 3 | 3 | 1 | 2 | 0 | |
| K 688 | K3-04 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS | 4 | 4 | 4 | 3 | 1 | 3 | 5 | |
| K 689 | K3-05 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS | 12 | 11 | 12 | 11 | 15 | 6 | 5 | |
| K 690 | K3-06 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS | 3 | 3 | 4 | 4 | 3 | 0 | 0 | |
| K 691 | K3-07 DO YOU ADD BINARY NUMBERS TO GET A SUM | 10 | 8 | 13 | 11 | 12 | 6 | 5 | |
| K 692 | K3-08 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD | 3 | 3 | 4 | 4 | 3 | 2 | 0 | |
| K 693 | K3-09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD | 7 | 7 | 8 | 7 | 7 | 3 | 9 | |
| K 694 | K3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM | 2 | 2 | 4 | 4 | 0 | 0 | 0 | |
| L 695 | L1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS | 6 | 6 | 6 | 4 | 24 | 2 | 0 | |
| L 696 | L1-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES | 2 | 2 | 3 | 0 | 9 | 0 | 0 | LOGIC FUNCTIONS |
| L 697 | L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES | 2 | 2 | 3 | 0 | 9 | 0 | 0 | |
| L 698 | L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS | 2 | 2 | 3 | 0 | 9 | 0 | 0 | |
| L 699 | L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES | 2 | 2 | 3 | 0 | 9 | 0 | 0 | |
| L 700 | L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES | 3 | 4 | 3 | 0 | 12 | 0 | 0 | |
| L 701 | L1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES | 3 | 4 | 3 | 0 | 12 | 0 | 0 | |
| L 702 | L1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS | 3 | 3 | 3 | 0 | 12 | 0 | 0 | |
| L 703 | L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS | 3 | 3 | 3 | 0 | 10 | 2 | 0 | |
| L 704 | L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES | 7 | 7 | 9 | 2 | 22 | 2 | 0 | |
| L 705 | L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES | 6 | 7 | 9 | 2 | 22 | 2 | 0 | |
| L 706 | L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES | 6 | 7 | 9 | 1 | 21 | 2 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| L 707 | L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES | 5 | 5 | 4 | 1 | 18 | 2 | 0 | |
| L 708 | L2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC CIRCUITS | 3 | 3 | 3 | 1 | 9 | 2 | 0 | |
| L 709 | L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS | 1 | 0 | 1 | 0 | 1 | 0 | 0 | BOOLEAN EQUATIONS |
| L 710 | L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS | 1 | 0 | 1 | 0 | 1 | 0 | 0 | |
| L 711 | L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS | 1 | 1 | 1 | 0 | 3 | 0 | 0 | |
| L 712 | L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES | 2 | 1 | 3 | 1 | 3 | 2 | 0 | |
| L 713 | L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| L 714 | L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA | 1 | 1 | 1 | 0 | 3 | 0 | 0 | |
| L 715 | L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES | 1 | 1 | 1 | 1 | 1 | 0 | 0 | |
| L 716 | L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| L 717 | L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE | 2 | 2 | 1 | 1 | 6 | 0 | 0 | |
| L 718 | L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| L 719 | L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS | 1 | 1 | 1 | 0 | 3 | 0 | 0 | |
| L 720 | L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS | 1 | 0 | 1 | 0 | 1 | 0 | 0 | |
| L 721 | L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS | 2 | 1 | 3 | 0 | 4 | 2 | 0 | |
| L 722 | L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS | 1 | 1 | 1 | 0 | 3 | 0 | 0 | |
| L 723 | L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS | 2 | 1 | 3 | 0 | 4 | 2 | 0 | |
| L 724 | L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS | 1 | 1 | 1 | 0 | 3 | 0 | 0 | |
| L 725 | L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS | 2 | 2 | 3 | 1 | 6 | 2 | 0 | |
| L 726 | L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES | 1 | 0 | 1 | 0 | 1 | 0 | 0 | |
| L 727 | L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS | 1 | 1 | 1 | 0 | 3 | 0 | 0 | |
| L 728 | L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS | 1 | 1 | 1 | 0 | 3 | 0 | 0 | |
| L 729 | L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS | 1 | 0 | 1 | 0 | 1 | 0 | 0 | |
| L 730 | L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS | 1 | 1 | 1 | 0 | 4 | 0 | 0 | |
| L 731 | L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS | 1 | 1 | 1 | 0 | 4 | 0 | 0 | |
| L 732 | L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS | 1 | 1 | 1 | 1 | 1 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 109 | SPC 105 | SPC 104 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|---|
| L | 733 | L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB | 16 | 19 | 20 | 4 | 15 | 23 | 18 | |
| L | 734 | L3-02 DO YOU USE OR REFER TO UP-COUNTERS | 6 | 6 | 7 | 1 | 7 | 11 | 0 | |
| L | 735 | L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS | 5 | 5 | 5 | 1 | 6 | 8 | 0 | COUNTERS |
| L | 736 | L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS | 4 | 4 | 4 | 0 | 4 | 8 | 0 | |
| L | 737 | L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS | 3 | 2 | 4 | 0 | 1 | 5 | 0 | |
| L | 738 | L3-06 DO YOU USE OR REFER TO RING COUNTERS | 2 | 1 | 4 | 0 | 1 | 3 | 0 | |
| L | 739 | L3-07 DO YOU USE OR REFER TO DECADE COUNTERS | 5 | 4 | 8 | 2 | 3 | 6 | 9 | |
| L | 740 | L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS | 4 | 4 | 4 | 0 | 3 | 8 | 5 | |
| L | 741 | L3-09 DO YOU USE OR REFER TO DOWN CLOCKS | 2 | 2 | 4 | 0 | 1 | 3 | 0 | |
| L | 742 | L3-10 DO YOU USE OR REFER TO UP CLOCKS | 3 | 2 | 4 | 1 | 1 | 3 | 0 | |
| L | 743 | L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS | 2 | 2 | 1 | 0 | 3 | 2 | 0 | |
| L | 744 | L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS | 2 | 2 | 1 | 0 | 3 | 2 | 0 | |
| L | 745 | L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS | 2 | 2 | 1 | 0 | 3 | 2 | 0 | |
| L | 746 | L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS | 1 | 1 | 1 | 0 | 0 | 2 | 0 | |
| L | 747 | L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER | 1 | 1 | 1 | 0 | 1 | 2 | 0 | |
| L | 748 | L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS | 1 | 1 | 1 | 0 | 1 | 2 | 0 | |
| L | 749 | L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS | 4 | 4 | 3 | 0 | 4 | 3 | 0 | |
| L | 750 | L3-18 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS | 1 | 1 | 1 | 0 | 3 | 0 | 0 | |
| L | 751 | L3-19 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS | 1 | 1 | 1 | 0 | 1 | 0 | 0 | |
| L | 752 | L3-20 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTERS | 2 | 3 | 1 | 3 | 1 | 2 | 0 | |
| L | 753 | L3-21 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS | 3 | 2 | 5 | 0 | 4 | 2 | 0 | |
| L | 754 | L3-22 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS | 1 | 1 | 1 | 0 | 3 | 0 | 0 | |
| L | 755 | L3-23 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| L | 756 | L3-24 DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT | 2 | 2 | 1 | 0 | 4 | 2 | 0 | |
| M | 757 | M1-01 DO YOU WORK WITH SAWTOOTH WAVE GENERATORS | 3 | 3 | 3 | 4 | 1 | 0 | 5 | |
| M | 758 | M1-02 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS | 2 | 1 | 3 | 3 | 0 | 0 | 0 | TIMING CIRCUITS |
| M | 759 | M1-03 DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK | 2 | 2 | 1 | 0 | 4 | 2 | 0 | |
| M | 760 | M1-04 DO YOU WORK WITH PULSED OSCILLATORS WITHOUT REGENERATIVE FEEDBACK | 2 | 3 | 1 | 1 | 4 | 2 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | Dy-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| N 761 | M1-05 DO YOU WORK WITH BLOCKING OSCILLATORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| N 762 | M1-06 DO YOU USE OR REFER TO RISE TIME | 3 | 3 | 3 | 2 | 4 | 3 | 0 | |
| N 763 | M1-07 DO YOU USE OR REFER TO FALL OR FLYBACK TIME | 3 | 2 | 4 | 3 | 1 | 2 | 5 | |
| N 764 | M1-08 DO YOU USE OR REFER TO SWEEP TIME | 9 | 9 | 8 | 7 | 10 | 8 | 14 | |
| N 765 | M1-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS | 4 | 4 | 5 | 3 | 4 | 2 | 14 | |
| N 766 | M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS | 2 | 2 | 1 | 1 | 3 | 2 | 0 | |
| N 767 | M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS | 2 | 1 | 3 | 1 | 0 | 2 | 0 | |
| N 768 | M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS | 2 | 1 | 3 | 0 | 1 | 2 | 0 | |
| N 769 | M2-01 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB | 10 | 12 | 5 | 17 | 4 | 8 | 14 | |
| N 770 | M2-02 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS | 9 | 10 | 5 | 16 | 3 | 6 | 14 | USE OF SIGNAL GENERATORS |
| N 771 | M2-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL GENERATORS | 7 | 7 | 4 | 12 | 1 | 5 | 14 | |
| N 772 | M2-04 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS | 7 | 8 | 5 | 12 | 3 | 6 | 9 | |
| N 773 | M2-05 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS | 3 | 4 | 3 | 4 | 1 | 3 | 5 | |
| N 774 | M2-06 DO YOU USE AUDIO SINE-WAVE GENERATORS | 5 | 5 | 5 | 10 | 0 | 3 | 9 | |
| N 775 | M2-07 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE | 3 | 4 | 3 | 4 | 1 | 2 | 0 | |
| N 776 | M2-08 DO YOU USE RF GENERATORS LESS THAN 1,000 MH | 3 | 3 | 3 | 3 | 0 | 0 | 9 | |
| N 777 | M2-09 DO YOU USE RF GENERATORS GREATER THAN 1,000 MH | 2 | 2 | 1 | 2 | 0 | 0 | 9 | |
| N 778 | M2-10 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS | 5 | 6 | 1 | 9 | 1 | 2 | 5 | |
| N 779 | M3-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR GENERATORS | 44 | 46 | 38 | 48 | 51 | 40 | 32 | MOTORS AND GENERATORS |
| N 780 | M3-02 DO YOU INSPECT MOTORS | 24 | 25 | 22 | 21 | 25 | 22 | 27 | |
| N 781 | M3-03 DO YOU CLEAN OR LUBRICATE MOTORS | 19 | 15 | 12 | 11 | 16 | 9 | 23 | |
| N 782 | M3-04 DO YOU OPERATE MOTORS | 25 | 25 | 26 | 22 | 27 | 23 | 23 | |
| N 783 | M3-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS | 26 | 28 | 22 | 19 | 31 | 26 | 27 | |
| N 784 | M3-06 DO YOU REMOVE OR REPLACE MOTOR PARTS | 7 | 7 | 4 | 3 | 3 | 11 | 5 | |
| N 785 | M3-07 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS | 31 | 33 | 25 | 28 | 36 | 29 | 32 | |
| N 786 | M3-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS | 8 | 9 | 5 | 4 | 4 | 12 | 5 | |
| N 787 | M3-09 DO YOU PERFORM ANY TASKS ON FIELD COILS | 5 | 4 | 5 | 4 | 3 | 5 | 0 | |
| N 788 | M3-10 DO YOU PERFORM ANY TASKS ON ARMATURES | 5 | 5 | 5 | 4 | 3 | 6 | 0 | |
| N 789 | M3-11 DO YOU PERFORM ANY TASKS ON ROTORS | 5 | 5 | 5 | 4 | 3 | 8 | 0 | |
| N 790 | M3-12 DO YOU PERFORM ANY TASKS ON BRUSHES | 6 | 6 | 5 | 3 | 4 | 8 | 5 | |
| N 791 | M3-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS | 5 | 5 | 7 | 4 | 3 | 6 | 5 | |
| N 792 | M3-14 DO YOU PERFORM ANY TASKS ON COMMUTATORS | 5 | 5 | 5 | 3 | 3 | 6 | 5 | |
| N 793 | M3-15 DO YOU PERFORM ANY TASKS ON POLE PIECES | 4 | 4 | 4 | 2 | 3 | 5 | 5 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| N 794 | M3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR | 8 | 9 | 7 | 9 | 3 | 8 | 8 | |
| N 795 | M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR | 9 | 9 | 8 | 2 | 3 | 6 | 8 | |
| N 796 | M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS | 8 | 8 | 8 | 9 | 3 | 6 | 9 | |
| N 797 | M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS | 30 | 30 | 30 | 23 | 33 | 28 | 32 | |
| N 798 | M3-20 DO YOU WORK WITH INDUCTION MOTORS | 23 | 21 | 29 | 19 | 19 | 22 | 23 | |
| N 799 | M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS | 10 | 9 | 12 | 9 | 6 | 12 | 14 | |
| N 800 | M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS | 20 | 19 | 22 | 14 | 19 | 20 | 23 | |
| N 801 | M3-23 DO YOU INSPECT GENERATORS | 32 | 34 | 26 | 37 | 37 | 29 | 23 | |
| N 802 | M3-24 DO YOU CLEAN OR LUBRICATE GENERATORS | 14 | 15 | 12 | 14 | 16 | 9 | 16 | |
| N 803 | M3-25 DO YOU OPERATE GENERATORS | 22 | 23 | 21 | 24 | 27 | 19 | 23 | |
| N 804 | M3-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS | 34 | 36 | 28 | 40 | 43 | 28 | 27 | |
| N 805 | M3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS | 5 | 6 | 3 | 3 | 1 | 8 | 0 | |
| N 806 | M3-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS | 37 | 39 | 28 | 39 | 46 | 32 | 27 | |
| N 807 | M3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS | 5 | 5 | 4 | 3 | 1 | 8 | 5 | |
| N 808 | N1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB | 79 | 79 | 78 | 80 | 82 | 72 | 77 | |
| N 809 | N1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS | 30 | 29 | 33 | 31 | 19 | 40 | 45 | |
| N 810 | N1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS | 32 | 32 | 32 | 29 | 27 | 42 | 45 | METER MOVEMENTS |
| N 811 | N1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS | 29 | 28 | 33 | 26 | 26 | 38 | 41 | |
| N 812 | N1-05 DO YOU READ METER SCALES | 85 | 85 | 87 | 84 | 90 | 82 | 86 | |
| N 813 | N1-06 DO YOU EXTEND THE RANGE OF AMMETERS | 24 | 25 | 28 | 27 | 22 | 34 | 23 | |
| N 814 | N1-07 DO YOU ZERO OHMMETERS | 84 | 83 | 84 | 82 | 88 | 82 | 86 | |
| N 815 | N1-08 DO YOU ZERO AMMETERS | 36 | 36 | 36 | 29 | 39 | 38 | 36 | |
| N 816 | N1-09 DO YOU EXTEND THE RANGE OF VOLTMETERS | 38 | 36 | 42 | 38 | 31 | 43 | 32 | |
| N 817 | N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT) | 38 | 39 | 34 | 32 | 46 | 42 | 41 | |
| N 818 | N2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB | 2 | 2 | 3 | 0 | 3 | 2 | 0 | |
| N 819 | N2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS | 1 | 1 | 1 | 0 | 1 | 0 | 0 | SATURABLE REACTORS AND MAGNETIC AMPLIFIERS |
| N 820 | N2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS | 1 | 1 | 1 | 0 | 1 | 0 | 0 | |
| N 821 | N2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS | 1 | 1 | 1 | 0 | 1 | 0 | 0 | |
| N 822 | N2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS | 1 | 1 | 1 | 0 | 1 | 0 | 0 | |
| N 823 | N2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS | 1 | 1 | 1 | 0 | 1 | 0 | 0 | |
| N 824 | N2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS | 1 | 1 | 1 | 0 | 1 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | DY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|---|
| N | 825 | N2-08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS | 1 | 0 | 3 | 1 | 0 | 0 | 0 | |
| N | 826 | N2-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE REACTORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| N | 827 | N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE REACTORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| N | 828 | N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| N | 829 | N2-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE REACTORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| N | 830 | N2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN SATURABLE REACTORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| N | 831 | N2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE REACTORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| N | 832 | N2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN SATURABLE REACTORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| N | 833 | N2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS | 1 | 1 | 1 | 0 | 1 | 0 | 0 | |
| N | 834 | N3-01 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT JOB | 2 | 2 | 1 | 1 | 1 | 3 | 0 | |
| N | 835 | N3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS | 1 | 1 | 1 | 0 | 1 | 0 | 0 | WAVESHAPING |
| N | 836 | N3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW) | 1 | 1 | 1 | 0 | 1 | 0 | 0 | CIRCUITS |
| N | 837 | N3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT) | 1 | 1 | 1 | 0 | 1 | 0 | 0 | |
| N | 838 | N3-05 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF) | 1 | 1 | 1 | 0 | 1 | 0 | 0 | |
| N | 839 | N3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS | 1 | 1 | 1 | 0 | 1 | 0 | 0 | |
| N | 840 | N3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS | 1 | 1 | 1 | 0 | 1 | 2 | 0 | |
| N | 841 | N3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT | 1 | 1 | 1 | 0 | 1 | 2 | 0 | |
| N | 842 | N3-09 DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT AND OUTPUT CONFIGURATION | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| N | 843 | N3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS | 1 | 1 | 1 | 0 | 1 | 0 | 0 | |
| N | 844 | N3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| O | 845 | 01-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR PRESENT JOB | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| O | 846 | 01-02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| O | 847 | 01-03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | SINGLE SIDEBAND |
| O | 848 | 01-04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | SYSTEMS |
| O | 849 | 01-05 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE SYSTEMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| O | 850 | 01-06 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE COMPONENTS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| O | 851 | 01-07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE SYSTEMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| O | 852 | 01-08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE COMPONENTS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING



| | DY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 |
|---|---|---|---|---|---|---|---|---|
| 0 853 | 01-09 DO YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 854 | 01-10 DO YOU PERFORM TASKS ON SSB BALANCED MODULATORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 855 | 01-11 DO YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 856 | 01-12 DO YOU PERFORM TASKS ON SSB LC FILTERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 857 | 01-13 DO YOU PERFORM TASKS ON SSB CRYSTAL FILTERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 858 | 01-14 DO YOU PERFORM TASKS ON SSB MECHANICAL FILTERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 859 | 01-15 DO YOU PERFORM TASKS ON SSB OSCILLATORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 860 | 01-16 DO YOU PERFORM TASKS ON SSB MIXERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 861 | 01-17 DO YOU PERFORM TASKS ON SSB DRIVERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 862 | 01-18 DO YOU PERFORM TASKS ON SSB POWER AMPLIFIERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 863 | 01-19 DO YOU PERFORM TASKS ON SSB RF AMPLIFIERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 864 | 01-20 DO YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 865 | 01-21 DO YOU PERFORM TASKS ON SSB IF AMPLIFIERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 866 | 01-22 DO YOU PERFORM TASKS ON SSB DEMODULATORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 867 | 01-23 DO YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB SYSTEM STAGES | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 868 | 01-24 DO YOU USE OR REFER TO SELECTIVE FADING | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 869 | 01-25 DO YOU USE OR REFER TO PEAK POWER | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 870 | 01-26 DO YOU USE OR REFER TO FREQUENCY STABILITY | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 871 | 01-27 DO YOU USE OR REFER TO RESPONSE CURVES FOR BANDWIDTH FILTERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 872 | 01-28 DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB TRANSMITTERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 873 | 01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB TRANSMITTER SCHEMATIC DIAGRAMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 874 | 01-30 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB RECEIVER SCHEMATIC DIAGRAMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 875 | 02-01 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JOB | 2 | 1 | 3 | 1 | 0 | 2 | 0 |
| 0 876 | 02-02 DO YOU INSPECT PULSE MODULATION SYSTEMS | 1 | 1 | 1 | 1 | 0 | 2 | 0 |
| 0 877 | 02-03 DO YOU CLEAN PULSE MODULATION SYSTEMS | 2 | 1 | 3 | 1 | 0 | 2 | 0 |
| 0 878 | 02-04 DO YOU ALIGN PULSE MODULATION SYSTEMS | 1 | 1 | 3 | 0 | 0 | 2 | 0 |
| 0 879 | 02-05 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM COMPONENTS | 1 | 0 | 3 | 0 | 0 | 2 | 0 |
| 0 880 | 02-06 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM | 1 | 0 | 1 | 0 | 0 | 2 | 0 |
| 0 881 | 02-07 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS | 1 | 0 | 1 | 0 | 0 | 2 | 0 |
| 0 882 | 02-08 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM COMPONENTS | 1 | 0 | 1 | 0 | 0 | 2 | 0 |
| 0 883 | 02-09 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM) SYSTEMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 884 | 02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM) SYSTEMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 885 | 02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM) SYSTEMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 886 | 02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 887 | 02-13 DO YOU WORK ON LINE PULSING MODULATION SYSTEMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 888 | 02-14 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF MODULATION SYSTEM | 1 | 0 | 1 | 0 | 0 | 0 | 0 |

PULSE MODULATION SYSTEMS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| 0 853 | 01-09 DO YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 854 | 01-10 DO YOU PERFORM TASKS ON SSB BALANCED MODULATORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 855 | 01-11 DO YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 856 | 01-12 DO YOU PERFORM TASKS ON SSB LC FILTERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 857 | 01-13 DO YOU PERFORM TASKS ON SSB CRYSTAL FILTERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 858 | 01-14 DO YOU PERFORM TASKS ON SSB MECHANICAL FILTERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 859 | 01-15 DO YOU PERFORM TASKS ON SSB OSCILLATORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 860 | 01-16 DO YOU PERFORM TASKS ON SSB MIXERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 861 | 01-17 DO YOU PERFORM TASKS ON SSB DRIVERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 8 |
| 0 862 | 01-18 DO YOU PERFORM TASKS ON SSB POWER AMPLIFIERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 863 | 01-19 DO YOU PERFORM TASKS ON SSB RF AMPLIFIERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 864 | 01-20 DO YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 865 | 01-21 DO YOU PERFORM TASKS ON SSB IF AMPLIFIERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 866 | 01-22 DO YOU PERFORM TASKS ON SSB DEMODULATORS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 867 | 01-23 DO YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB SYSTEM STAGES | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 868 | 01-24 DO YOU USE OR REFER TO SELECTIVE FADING | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 869 | 01-25 DO YOU USE OR REFER TO PEAK POWER | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 870 | 01-26 DO YOU USE OR REFER TO FREQUENCY STABILITY | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 871 | 01-27 DO YOU USE OR REFER TO RESPONSE CURVES FOR BANDWIDTH FILTERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 8 |
| 0 872 | 01-28 DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB TRANSMITTERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 873 | 01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB TRANSMITTER SCHEMATIC DIAGRAMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 874 | 01-30 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB RECEIVER SCHEMATIC DIAGRAMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 875 | 02-01 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JOB | 2 | 1 | 3 | 1 | 0 | 2 | 0 | |
| 0 876 | 02-02 DO YOU INSPECT PULSE MODULATION SYSTEMS | 1 | 1 | 1 | 1 | 0 | 2 | 0 | PULSE MODULATION SYSTEMS |
| 0 877 | 02-03 DO YOU CLEAN PULSE MODULATION SYSTEMS | 1 | 1 | 1 | 1 | 0 | 2 | 0 | |
| 0 878 | 02-04 DO YOU ALIGN PULSE MODULATION SYSTEMS | 1 | 1 | 1 | 0 | 0 | 2 | 0 | |
| 0 879 | 02-05 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS | 2 | 1 | 3 | 1 | 0 | 2 | 0 | 3 |
| 0 880 | 02-06 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM COMPONENTS | 1 | 1 | 3 | 0 | 0 | 2 | 0 | |
| 0 881 | 02-07 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS | 1 | 1 | 3 | 0 | 0 | 2 | 0 | |
| 0 882 | 02-08 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM COMPONENTS | 1 | 1 | 3 | 0 | 0 | 2 | 0 | |
| 0 883 | 02-09 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM) SYSTEMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 884 | 02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM) SYSTEMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 885 | 02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM) SYSTEMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 886 | 02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 8 |
| 0 887 | 02-13 DO YOU WORK ON LINE PULSING MODULATION SYSTEMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 888 | 02-14 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF MODULATION SYSTEM | 1 | 1 | 1 | 0 | 0 | 2 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 109 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 889 | 02-15 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES | 1 | 1 | 3 | 0 | 0 | 2 | 0 | |
| 0 890 | 02-16 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODES | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 891 | 02-17 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 892 | 02-18 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 893 | 02-19 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATRONS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 894 | 02-20 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS | 1 | 0 | 3 | 0 | 1 | 0 | 0 | |
| 0 895 | 02-21 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBES | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 896 | 02-22 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 897 | 02-23 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 898 | 02-24 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIERS | 1 | 0 | 3 | 0 | 0 | 0 | 0 | |
| 0 899 | 02-25 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTORS | 1 | 1 | 1 | 0 | 0 | 2 | 0 | |
| 0 900 | 02-26 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 901 | 02-27 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 902 | 02-28 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 903 | 02-29 | DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF) | 1 | 1 | 1 | 1 | 0 | 0 | 0 | |
| 0 904 | 02-30 | DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT) | 1 | 1 | 3 | 1 | 0 | 0 | 0 | |
| 0 905 | 02-31 | DO YOU USE OR REFER TO PULSE WIDTH (PW) | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 906 | 02-32 | DO YOU USE OR REFER TO PULSE SHAPE | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 907 | 02-33 | DO YOU USE OR REFER TO PEAK POWER | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 908 | 02-34 | DO YOU USE OR REFER TO AVERAGE POWER | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 909 | 02-35 | DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF) | 1 | 1 | 1 | 1 | 0 | 0 | 0 | |
| 0 910 | 02-36 | DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF) | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 911 | 02-37 | DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 912 | 02-38 | DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 913 | 02-39 | DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 0 914 | 03-01 | DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB | 1 | 0 | 1 | 0 | 0 | 0 | 0 | ANTENNAS |
| 0 915 | 03-02 | DO YOU INSPECT ANTENNAS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 |
|---|---|---|---|---|---|---|---|---|
| 0 916 | 03-03 DO YOU CLEAN ANTENNAS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 917 | 03-04 DO YOU PHYSICALLY ALIGN ANTENNAS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 918 | 03-05 DO YOU ELECTRICALLY ALIGN ANTENNAS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 919 | 03-06 DO YOU TROUBLESHOOT TO ANTENNAS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 920 | 03-07 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 921 | 03-08 DO YOU REMOVE OR INSTALL ANTENNAS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 922 | 03-09 DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 923 | 03-10 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 924 | 03-11 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 925 | 03-12 DO YOU DETERMINE THE DIRECTION OF THE MAGNETIC LINES IN RELATION TO THE ELECTRIC LINES OF FORCE FOR ANTENNAS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 926 | 03-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE OF CORRECT LENGTH (HALF-WAVE) ACT AS INDUCTIVE LOADS TO THE GENERATOR | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 927 | 03-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE LONGER THAN A HALF-WAVE ACT AS INDUCTIVE LOADS TO THE GENERATOR | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 928 | 03-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE SHORTER THAN A HALF-WAVE ACT AS CAPACITIVE LOADS TO THE GENERATOR | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 929 | 03-16 DO YOU WORK WITH HERTZ ANTENNAS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 930 | 03-17 DO YOU WORK WITH MARCONI ANTENNAS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 931 | 03-18 DO YOU WORK WITH BROADSIDE ARRAYS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 932 | 03-19 DO YOU WORK WITH END-FIRE ARRAYS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 933 | 03-20 DO YOU WORK WITH CARDIOID ARRAYS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 934 | 03-21 DO YOU WORK WITH COLLINEAR ARRAYS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 935 | 03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 936 | 03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 937 | 03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 938 | 03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 939 | 03-26 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 940 | 03-27 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 941 | 03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 942 | 03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 943 | 03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 944 | 03-31 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR SPECIFIC WAVELENGTHS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | DY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|---|
| O | 948 | 03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| O | 946 | 03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| O | 947 | 03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| O | 948 | 03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| O | 949 | 03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| O | 950 | 03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| O | 951 | 03-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| O | 952 | 03-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P | 953 | P1-01 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS BETWEEN RECEIVERS AND ANTENNAS, TELEPHONE LEADS, AS WELL AS HIGH VOLTAGE POWER LINES, ETC. DO NOT CONSIDER WAVEGUIDES AS TRANSMISSION LINES | 1 | 1 | 1 | 0 | 1 | 3 | 0 | TRANSMISSION LINES |
| P | 954 | P1-02 DO YOU REFER TO OR USE COPPER LOSS OR I2R LOSS IN TRANSMISSION LINES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P | 955 | P1-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P | 956 | P1-04 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P | 957 | P1-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| P | 958 | P1-06 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| P | 959 | P1-07 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES | 1 | 0 | 1 | 0 | 1 | 0 | 0 | |
| P | 960 | P1-08 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES | 1 | 0 | 1 | 0 | 1 | 0 | 0 | |
| P | 961 | P1-09 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES | 1 | 0 | 1 | 0 | 1 | 0 | 0 | |
| P | 962 | P1-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES | 2 | 1 | 3 | 1 | 1 | 3 | 0 | |
| P | 963 | P1-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P | 964 | P1-12 DO YOU TROUBLESHOOT TRANSMISSION LINES | 2 | 1 | 3 | 1 | 1 | 3 | 0 | |
| P | 965 | P1-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION (OPEN, SHORTED, CAPACITIVE, INDUCTIVE) | 1 | 0 | 3 | 1 | 0 | 2 | 0 | |
| P | 966 | P1-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P | 967 | P1-15 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS | 1 | 0 | 1 | 0 | 1 | 0 | 0 | |
| P | 968 | P1-16 DO YOU MEASURE STANDING WAVE RATIOS (SR) OF TRANSMISSION LINES | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| P | 969 | P1-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| P | 970 | P1-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH MATCHING TRANSFORMERS TO MATCH TRANSMISSION LINES TO LOADS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |

PCT RDRS RESPONDING 'YES' BY SELECTED GRPS — GPSUM6 PAGE 28

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| P 971 | P1-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 972 | P1-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 973 | P1-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 974 | P1-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| P 975 | P1-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 976 | P1-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 977 | P1-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| P 978 | P1-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 979 | P1-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 980 | P1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF TRANSMISSION LINES REMAIN CONSTANT, THE ELECTRICAL LENGTH INCREASES | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| P 981 | P1-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 982 | P1-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 983 | P1-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 984 | P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 985 | P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | WAVEGUIDES AND CAVITY RESONATORS |
| P 986 | P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 987 | P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 988 | P2-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 989 | P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 990 | P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 991 | P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 992 | P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 993 | P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 994 | P2-11 DO YOU REMOVE OR INSTALL DUMMY LOADS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 995 | P2-12 DO YOU REMOVE OR INSTALL E BENDS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 996 | P2-13 DO YOU REMOVE OR INSTALL H BENDS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 997 | P2-14 DO YOU REMOVE OR INSTALL OTHER BENDS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 998 | P2-15 DO YOU REMOVE OR INSTALL CHOKE JOINTS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P 999 | P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1000 | P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1001 | P2-18 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1002 | P2-19 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 |
|---|---|---|---|---|---|---|---|---|
| P1003 | P2-20 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1004 | P2-21 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1005 | P2-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1006 | P2-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1007 | P2-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1008 | P2-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1009 | P2-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1010 | P2-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OF .7 WAVELENGTHS OF THE OPERATING FREQUENCY | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1011 | P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .8 WAVELENGTHS IN SIZE, WITH .35 USED AS AN AVERAGE | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1012 | P2-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1013 | P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1014 | P2-31 DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE DIRECTION OF PROPAGATION, DIRECTION OF "E" FIELD, OR DIRECTION OF "H" FIELD IN WAVEGUIDES | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1015 | P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1016 | P2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1017 | P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR "H" LINES IN WAVEGUIDES | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1018 | P2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1019 | P2-36 ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1020 | P2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1021 | P2-38 ARE APERTURES (WINDOWS OR IRISES) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1022 | P2-39 ARE DON'T REMEMBER THE KIND OF ENERGY COUPLING USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1023 | P2-40 DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1024 | P2-41 DO YOU DETERMINE THE POSITIONING OF LOOPS IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|
| P1025 P2-92 DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1026 P2-93 ARE CHOKE JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1027 P2-94 ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1028 P2-95 ARE DON'T REMEMBER THE KIND OF JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1029 P2-96 DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1030 P2-97 DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1031 P2-98 DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1032 P2-99 DO YOU TUNE CAVITY RESONATORS USING DON'T REMEMBER THE METHOD OF TUNING | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1033 P2-00 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1034 P3-01 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR MAGNETRONS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | MICROWAVE AMPLIFIERS AND OSCILLATORS |
| P1035 P3-02 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1036 P3-03 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1037 P3-04 DO YOU USE OR REFER TO LEAD INDUCTANCE | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1038 P3-05 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL CIRCUITRY | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1039 P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1040 P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1041 P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1042 P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1043 P3-10 DO YOU WORK WITH REFLEX KLYSTRONS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1044 P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1045 P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC AMPLIFIERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1046 P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1047 P3-14 DO YOU WORK WITH MAGNETRONS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1048 P3-15 DO YOU INSPECT KLYSTRONS OR TWT | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1049 P3-16 DO YOU CLEAN KLYSTRONS OR TWT | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1050 P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1051 P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1052 P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR TWT | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1053 P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT | 1 | 0 | 1 | 0 | 1 | 0 | 0 | |
| P1054 P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1055 P3-22 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1056 P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1057 P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1058 P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 |
|---|---|---|---|---|---|---|---|
| P1059 P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1060 P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1061 P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1062 P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1063 P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1064 P3-31 DO YOU INSPECT MAGNETRONS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1065 P3-32 DO YOU CLEAN MAGNETRONS | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1066 P3-33 DO YOU ADJUST MAGNETRONS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1067 P3-34 DO YOU TUNE MAGNETRONS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1068 P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1069 P3-36 DO YOU TROUBLESHOOT MAGNETRONS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1070 P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1071 P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1072 P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1073 P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1074 P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRIDS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1075 P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1076 P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS DRIFT SPACES | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1077 P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER GRIDS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1078 P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER CAVITIES | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1079 P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1080 P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1081 P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REPELLER (REFLECTOR) PLATES | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1082 P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1083 P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1084 P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1085 P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1086 P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1087 P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| BY-TSK | | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| P1088 | P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1089 | P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1090 | P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1091 | P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1092 | P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1093 | P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELIXES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1094 | P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1095 | P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1096 | P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENUATORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1097 | P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1098 | P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1099 | P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLER CAVITIES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1100 | P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1101 | P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1102 | P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1103 | P3-70 DO YOU PERFORM TASKS ON ANODES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1104 | P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1105 | P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1106 | P3-73 DO YOU PERFORM TASKS ON HEATER LEADS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1107 | P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1108 | P3-75 DO YOU PERFORM TASKS ON CATHODES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1109 | P3-76 DO YOU PERFORM TASKS ON MAGNETS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 01110 | 01-01 DO YOU USE OR REFER TO STORAGE REGISTERS | 1 | 1 | 0 | 0 | 3 | 0 | 0 | |
| 01111 | 01-02 DO YOU USE OR REFER TO SHIFT REGISTERS | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| 01112 | 01-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS | 1 | 1 | 0 | 0 | 3 | 0 | 0 | REGISTERS |
| 01113 | 01-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS | 1 | 1 | 0 | 0 | 3 | 0 | 0 | |
| 01114 | 01-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| 01115 | 01-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS | 1 | 1 | 0 | 0 | 1 | 2 | 0 | |

PCT MDRS RESPONDING 'YES' BY SELECTED GRPS — GPSUM6 PAGE 98

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| Q1116 | Q1-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES HAVE PASSED | 1 | 1 | 0 | 0 | 3 | 0 | 0 | |
| Q1117 | Q2-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB | 6 | 6 | 8 | 2 | 6 | 11 | 9 | |
| Q1118 | Q2-02 DO YOU USE OR REFER TO DELAY LINES | 1 | 1 | 0 | 0 | 3 | 0 | 0 | STORAGE DEVICES |
| Q1119 | Q2-03 DO YOU USE OR REFER TO MAGNETIC CORES | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| Q1120 | Q2-04 DO YOU USE OR REFER TO MAGNETIC DRUMS | 1 | 1 | 3 | 0 | 0 | 3 | 5 | |
| Q1121 | Q2-05 DO YOU USE OR REFER TO MAGNETIC TAPES | 4 | 2 | 6 | 1 | 3 | 5 | 9 | |
| Q1122 | Q2-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED OR MEMORY SYSTEMS | 2 | 1 | 5 | 0 | 3 | 2 | 9 | |
| Q1123 | Q2-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS | 1 | 1 | 0 | 0 | 4 | 0 | 0 | |
| Q1124 | Q2-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS | 1 | 1 | 0 | 0 | 3 | 0 | 0 | |
| Q1125 | Q2-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES | 1 | 1 | 0 | 0 | 3 | 0 | 0 | |
| Q1126 | Q3-01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D) CONVERTERS, OR BINARY-TO-DECIMAL READOUT CONVERTERS | 3 | 4 | 3 | 2 | 6 | 2 | 9 | DIGITAL TO ANALOG CONVERTERS |
| Q1127 | Q3-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT VOLTAGES | 1 | 1 | 1 | 1 | 3 | 0 | 5 | |
| Q1128 | Q3-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS IS DETERMINED BY ADDING THE DENOMINATORS OF THE RESISTORS | 0 | 0 | 0 | 1 | 0 | 0 | 0 | |
| Q1129 | Q3-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS | 1 | 1 | 0 | 1 | 3 | 0 | 0 | |
| Q1130 | Q3-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS | 1 | 1 | 0 | 1 | 1 | 0 | 0 | |
| Q1131 | Q3-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS | 1 | 1 | 1 | 1 | 3 | 0 | 0 | |
| Q1132 | Q3-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS | 1 | 1 | 0 | 1 | 1 | 0 | 0 | |
| Q1133 | Q3-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS | 1 | 1 | 1 | 1 | 1 | 0 | 5 | |
| Q1134 | Q3-09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS | 1 | 0 | 1 | 0 | 0 | 2 | 5 | |
| Q1135 | Q3-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| Q1136 | Q3-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| Q1137 | Q3-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS | 1 | 0 | 1 | 0 | 1 | 0 | 5 | |
| Q1138 | Q3-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS | 1 | 0 | 1 | 0 | 1 | 0 | 5 | |
| Q1139 | Q3-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS | 1 | 1 | 3 | 1 | 1 | 2 | 5 | |

PCT NOBS RESPONDING "YES" BY SELECTED GRPS — GROUPS PAGE 91

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|
| R1190 R1-01 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB | 0 | 0 | 0 | 0 | 0 | 0 | 0 | PHANTASTRONS |
| R1191 R2-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| R1192 R2-02 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS | 0 | 0 | 0 | 0 | 1 | 0 | 0 | SCHMITT TRIGGERS |
| R1193 R2-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| R1194 R3-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES | 36 | 34 | 41 | 32 | 34 | 40 | 46 | |
| R1195 R3-02 DO YOU FABRICATE COAXIAL CABLES | 54 | 52 | 66 | 62 | 54 | 52 | 50 | CABLE FABRICATION |
| S1196 S1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS | 31 | 32 | 30 | 30 | 22 | 40 | 27 | |
| S1197 S1-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE LIGHT DECODER SYSTEMS | 6 | 6 | 7 | 9 | 9 | 6 | 14 | INPUT/OUTPUT DEVICES |
| S1198 S1-03 DO YOU ANALYZE NIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA | 1 | 1 | 1 | 1 | 1 | 0 | 0 | |
| S1199 S2-01 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB | 1 | 0 | 9 | 9 | 0 | 0 | 0 | PHOTO SENSITIVE DEVICES |
| S1150 S3-01 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS | 0 | 0 | 3 | 0 | 7 | 0 | 0 | |
| S1151 S3-02 DO YOU MEASURE EXCITATION FREQUENCIES | 1 | 1 | 0 | 1 | 1 | 0 | 0 | |
| S1152 S3-03 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS | 2 | 3 | 0 | 3 | 3 | 0 | 0 | SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS) |
| S1153 S3-04 DO YOU USE OR REFER TO EXCITATION FREQUENCIES | 1 | 1 | 0 | 1 | 1 | 0 | 0 | |
| S1154 S3-05 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS | 2 | 2 | 0 | 2 | 3 | 0 | 0 | |
| S1155 S3-06 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION | 5 | 6 | 1 | 5 | 7 | 3 | 0 | |
| S1156 S3-07 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION | 4 | 5 | 1 | 4 | 6 | 3 | 0 | |
| S1157 S3-08 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION | 5 | 6 | 1 | 5 | 6 | 3 | 0 | |
| S1158 S3-09 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION | 4 | 4 | 1 | 4 | 4 | 3 | 0 | |
| T1159 T1-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1160 T1-02 DO YOU INSPECT INFRARED SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | INFRARED |
| T1161 T1-03 DO YOU CLEAN INFRARED SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1162 T1-04 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1163 T1-05 DO YOU OPERATE INFRARED SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1164 T1-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1165 T1-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1166 T1-08 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1167 T1-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS | 0 | 0 | 0 | 1 | 0 | 0 | 0 | |
| T1168 T1-10 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS | 0 | 0 | 0 | 1 | 0 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| T1169 | T1-11 DO YOU USE OR REFER TO FAR REGION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1170 | T1-12 DO YOU USE OR REFER TO INTERMEDIATE REGION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1171 | T1-13 DO YOU USE OR REFER TO NEAR REGION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1172 | T1-14 DO YOU USE OR REFER TO MICRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1173 | T1-15 DO YOU USE OR REFER TO GRAY BODIES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1174 | T1-16 DO YOU USE OR REFER TO BLACK BODIES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1175 | T1-17 DO YOU USE OR REFER TO ABSORPTION | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| T1176 | T1-18 DO YOU USE OR REFER TO SCATTERING | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1177 | T1-19 DO YOU USE OR REFER TO ABSOLUTE ZERO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| T1178 | T1-20 DO YOU PERFORM TASKS ON BLITZ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1179 | T1-21 DO YOU PERFORM TASKS ON TARGET BUTTONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1180 | T1-22 DO YOU PERFORM TASKS ON ERECTOR LENSES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1181 | T1-23 DO YOU PERFORM TASKS ON OCULAR LENSES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1182 | T1-24 DO YOU PERFORM TASKS ON CORRECTION LENSES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1183 | T1-25 DO YOU PERFORM TASKS ON FILTERS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1184 | T1-26 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1185 | T1-27 DO YOU PERFORM TASKS ON PLANE MIRRORS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1186 | T2-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1187 | T2-02 DO YOU INSPECT LASER SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | LASERS 8 |
| T1188 | T2-03 DO YOU CLEAN LASER SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1189 | T2-04 DO YOU OPERATE LASER SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1190 | T2-05 DO YOU OPERATE LASER SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1191 | T2-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1192 | T2-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1193 | T2-08 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1194 | T2-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1195 | T2-10 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| T1196 | T2-11 DO YOU USE OR REFER TO ANGSTROMS (A) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1197 | T2-12 DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1198 | T2-13 DO YOU USE OR REFER TO GROUND STATE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1199 | T2-14 DO YOU USE OR REFER TO EXCITED STATE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1200 | T2-15 DO YOU USE OR REFER TO PACKET OF RADIATION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1201 | T2-16 DO YOU USE OR REFER TO PHOTONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1202 | T2-17 DO YOU USE OR REFER TO SPONTANEOUS EMISSION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1203 | T2-18 DO YOU USE OR REFER TO STIMULATED EMISSION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1204 | T2-19 DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1205 | T2-20 DO YOU USE OR REFER TO INVERSION LEVEL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1206 | T2-21 DO YOU USE OR REFER TO MONOCHROMATIC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1207 | T2-22 DO YOU WORK WITH ACTIVE MATERIALS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| T1208 | T2-23 DO YOU WORK WITH PUMPING SOURCES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1209 | T2-24 DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| T1210 | T2-25 DO YOU WORK WITH HALF SILVERED (92% REFLECTIVE) MIRRORS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1211 | T2-26 DO YOU WORK WITH HELICAL FLASHTUBES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1212 | T2-27 DO YOU WORK WITH RUBY | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1213 | T2-28 DO YOU WORK WITH HELIUM-NEON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1214 | T2-29 DO YOU WORK WITH HELIUM-XENON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1215 | T2-30 DO YOU WORK WITH XENON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1216 | T2-31 DO YOU WORK WITH CESIUM-HELIUM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1217 | T2-32 DO YOU WORK WITH ARGON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1218 | T2-33 DO YOU WORK WITH NEODYMIUM IN GLASS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1219 | T2-34 DO YOU WORK WITH GALLIUM ARSENIDE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1220 | T3-01 IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE (DVST) OR MULTIPLE MODE STORAGE TUBES (MMST) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1221 | T3-02 DO YOU INSPECT DVST OR MMST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | DISPLAY TUBES |
| T1222 | T3-03 DO YOU CLEAN DVST OR MMST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1223 | T3-04 DO YOU ADJUST OR CALIBRATE DVST OR MMST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1224 | T3-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1225 | T3-06 DO YOU TROUBLESHOOT DVST OR MMST CIRCUITS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1226 | T3-07 DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1227 | T3-08 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DVST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1228 | T3-09 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF MMST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1229 | T3-10 DO YOU PERFORM TASKS ON FLOOD GUNS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1230 | T3-11 DO YOU PERFORM TASKS ON WRITE GUNS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1231 | T3-12 DO YOU PERFORM TASKS ON ATTACK GUNS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1232 | T3-13 DO YOU PERFORM TASKS ON ERASE GUNS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1233 | T3-14 DO YOU PERFORM TASKS ON STORAGE GRIDS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| U1234 | U1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING TASKS | 3 | 2 | 8 | 0 | 3 | 3 | 5 | |
| U1235 | U1-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS | 2 | 0 | 5 | 0 | 1 | 0 | 5 | PROGRAMMING |
| U1236 | U1-03 DO YOU USE OR REFER TO PROGRAMS | 3 | 1 | 7 | 0 | 1 | 3 | 5 | |
| U1237 | U1-04 DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| U1238 | U1-05 DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS | 1 | 0 | 4 | 0 | 0 | 0 | 0 | |
| U1239 | U1-06 DO YOU USE OR REFER TO FOUR SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| U1240 | U1-07 DO YOU USE OR REFER TO BINARY SYSTEMS | 2 | 1 | 7 | 0 | 0 | 3 | 5 | |
| U1241 | U1-08 DO YOU USE OR REFER TO TIME-SHARING | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| U1242 | U1-09 DO YOU USE OR REFER TO DATA WORDS | 2 | 1 | 5 | 0 | 3 | 2 | 5 | |
| U1243 | U1-10 DO YOU USE OR REFER TO ADDRESS WORDS | 2 | 1 | 5 | 0 | 1 | 2 | 0 | |
| U1244 | U1-11 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS | 2 | 1 | 5 | 0 | 1 | 2 | 0 | |
| U1245 | U1-12 DO YOU USE OR REFER TO STEERING/INFORMATION | 1 | 2 | 0 | 0 | 3 | 3 | 0 | |
| U1246 | U1-13 DO YOU USE OR REFER TO INFORMATION WORDS | 1 | 1 | 3 | 0 | 1 | 2 | 0 | |
| U1247 | U1-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING | 3 | 1 | 8 | 0 | 1 | 2 | 5 | |
| U1248 | U1-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| BY-TSK | | SPC 101 | SPC 102 | SPC 103 | SPC 104 | SPC 105 | SPC 106 | SPC 107 | |
|---|---|---|---|---|---|---|---|---|---|
| U1249 | U1-16 DO YOU PERFORM TASKS ON INPUT DEVICES | 0 | 0 | 0 | 0 | 0 | 2 | 0 | |
| U1250 | U1-17 DO YOU PERFORM TASKS ON STORAGE DEVICES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| U1251 | U1-18 DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| U1252 | U1-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS | 1 | 0 | 3 | 0 | 0 | 2 | 0 | |
| U1253 | U1-20 DO YOU PERFORM TASKS ON OUTPUT DEVICES | 1 | 0 | 1 | 0 | 0 | 2 | 0 | |
| U1254 | U1-21 DO YOU PERFORM TASKS ON POWER SUPPLIES | 1 | 0 | 1 | 0 | 1 | 0 | 0 | |
| U1255 | U2-01 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND ATTENUATION | 2 | 2 | 3 | 0 | 4 | 5 | 5 | |
| U1256 | U2-02 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS | 1 | 1 | 0 | 0 | 1 | 2 | 0 | |
| U1257 | U2-03 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS | 1 | 1 | 0 | 0 | 1 | 2 | 0 | DB AND POWER RATIOS |
| U1258 | U2-04 DUMMY TASK TO IDENTIFY INCUMBENTS WHO PERFORMED NO TASKS | 1 | 1 | 0 | 0 | 1 | 2 | 0 | |

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SEP 77 T J O'CONNOR, F B BOWER

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| Basic electronics | Air Force training |
| Avionics | Teaching methods |
| Electronic equipment | Training |
| Electronic technicians | |

20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Avionics Instrument Systems Specialist (AFSC 32551). The report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the specialty or career ladder.

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